A CROSS COUNTRY INVESTIGATION OF SOCIAL ENTERPRISE INNOVATION: A MULTILEVEL MODELING APPROACH

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A CROSS COUNTRY INVESTIGATION OF SOCIAL ENTERPRISE INNOVATION: A MULTILEVEL MODELING APPROACH

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[To my husband, Kofi and our three children Kweku, Ama and Kwame]

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Abusua te sɛ kwaeɛ. Wowɔ akyire a, ebo mu.

Wobɛn ho a na wohunu sɛ edua biara si deɛ esi

Family is a like a forest, when you are outside of or far away from it, it is dense.

If you are inside you see that each tree has its own position.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

CSE	Comparative Social Enterprise Framework
DBI	Doing Business Index
EPI	Environmental Performance Index
GCI	Global Competitiveness Index
GEM	Global Entrepreneurship Monitor
GINI	Income Inequality Index
GLOBE	Global Leadership and Organizational Behavior Effectiveness Research Program Values Survey
GNI	Gross National Income
HDI	Human Development Index
HLM	Hierarchical Linear Modeling
ICC	Intraclass Correlation Coefficient
ICNPO	International Classification of Non Profit Organizations
MAR	Missing At Random
MCAR	Missing Completely At Random
NIS	National Systems of Innovation
NMAR	Not Missing and Random
SE	Social Enterprise
SEI	Social Enterprise Innovation
UNESCO	United Nations Educational, Scientific and Cultural Organization
WDI	World Development Index
WGI	World Governance Indicators

SUMMARY

The purpose of this dissertation is to contribute to prior comparative research in the social enterprise and innovation literature by building on the national systems of innovation (NIS) and comparative social enterprise (CSE) frameworks. The primary research questions relate directly to the impact that national-level factors (institutional variables as well as social, environmental and commercial opportunities) have on the size (i.e., number) and shape (i.e., areas of impact, percent revenue from sales, and percent volunteers) of the social enterprise sector in a country as well as their innovations. The research design uses established global datasets to test formal hypotheses on the relationships between national-level factors and social enterprise and social enterprise innovation. The analysis involves combining organizational data on social enterprise as well as national-level data on institutions and opportunities using the logistic and ordinal hierarchical linear modeling approach.

Results of this study indicate that a number of national-level factors significantly impact the probability of an organization being a social enterprise as opposed to a conventional business or traditional non-profit organization. This impact, however, does not appear to be as strong for social enterprise innovation. Findings suggest that future research is needed to better understand causal relationships between national environment and organizational characteristics of social enterprises, as well as understand the relative position of social enterprise within the broader international development literature.

CHAPTER 1

INTRODUCTION

1.1 The problem and its policy relevance

Today's entrepreneurs operate amidst a backdrop of 'wicked' social and environmental problems (Norton, 2005; Rittel & Webber, 1973). Rising unemployment, entrenched poverty, severe inequalities and global warming are just a few examples of the endemic social problems facing present and future generations across the globe. Equally jarring is the fact that the poorest 40 percent of the world's population accounts for just 5 percent of global income, while the richest 20 percent accounts for three-quarters of world income (UNDP, 2007). These problems are increasingly visible at the national level as less competitive countries are evaluated based on their attempts to narrow the gap and 'catch-up' (Fagerberg & Godinho, 2005).

However, catching up is often defined along technological lines and depends in large part on the extent to which industrializing economies are able to position their national innovation systems to take advantage of knowledge flows at the global level (Feinson, 2003). At the national level, innovation is the primary means whereby countries gain competitive economic advantage over their counterparts (Sala-i-Martin, 2010). Innovation is also an avenue to 'catch-up' for countries with incompatible innovative expertise or capability (Fagerberg & Godinho, 2005). At the organizational level, innovation gives firms a competitive advantage over rivals and helps to ensure financial sustainability. Thus, while the national systems of innovation (NIS) literature recognizes economic competitiveness to be a product of several interrelated institutions (e.g. financial, educational, cultural, historical), at its core, organizational-level innovation drives country level competitiveness (Lundvall, 1992). However,

organizational variation in the NIS framework has been a neglected area of investigation as NIS studies often take for granted the various types of organizations that contribute to national economic and social welfare.

In addition to legal distinctions (i.e., for-profit, non-profit, low-profit), organizations also vary according to their key objectives, mission or goals. The term 'value orientation' speaks to the level of commitment that an organization has towards the achievement of a particular outcome or 'bottom-line.' Most research has focused on the profit maximizing firms, where the bottom line is measured in terms of increasing profits, and is used to explain entrepreneurial and organizational success. However, not all organizations are profit maximizing. Organizations with non-profit or 'social' goals but using business principles are increasingly common among organizations with for-profit as well as non-profit legal structures (Murphy & Sachs, 2013). Similarly, social enterprise organizations (SE) (Kerlin, 2009) have researchers asking questions about organizational variation in the "non-market sector" which includes all entrepreneurial activity (including opportunity recognition and proactive action) that is not solely undertaken for the purpose of profit maximization or commercialization (Shockley, Frank, & Stough, 2008, p. 3).

1.2 Social enterprise, institutions and innovation

Social enterprise is an important organizational form, gaining attention in academia and the popular media (Bornstein, 2004; Dees, 2007). It derives from the 'social entrepreneurship' literature, a term first coined by the Ashoka Foundation's Bill Drayton (Light, 2006). Since then, the overlapping and competing definitions of social entrepreneurship and social enterprise have been the source of extensive dialogue and constructive debate (Defourny & Nyssens, 2012; Light, 2008). However, much of the academic literature on social enterprise and/or social entrepreneurship has suffered from

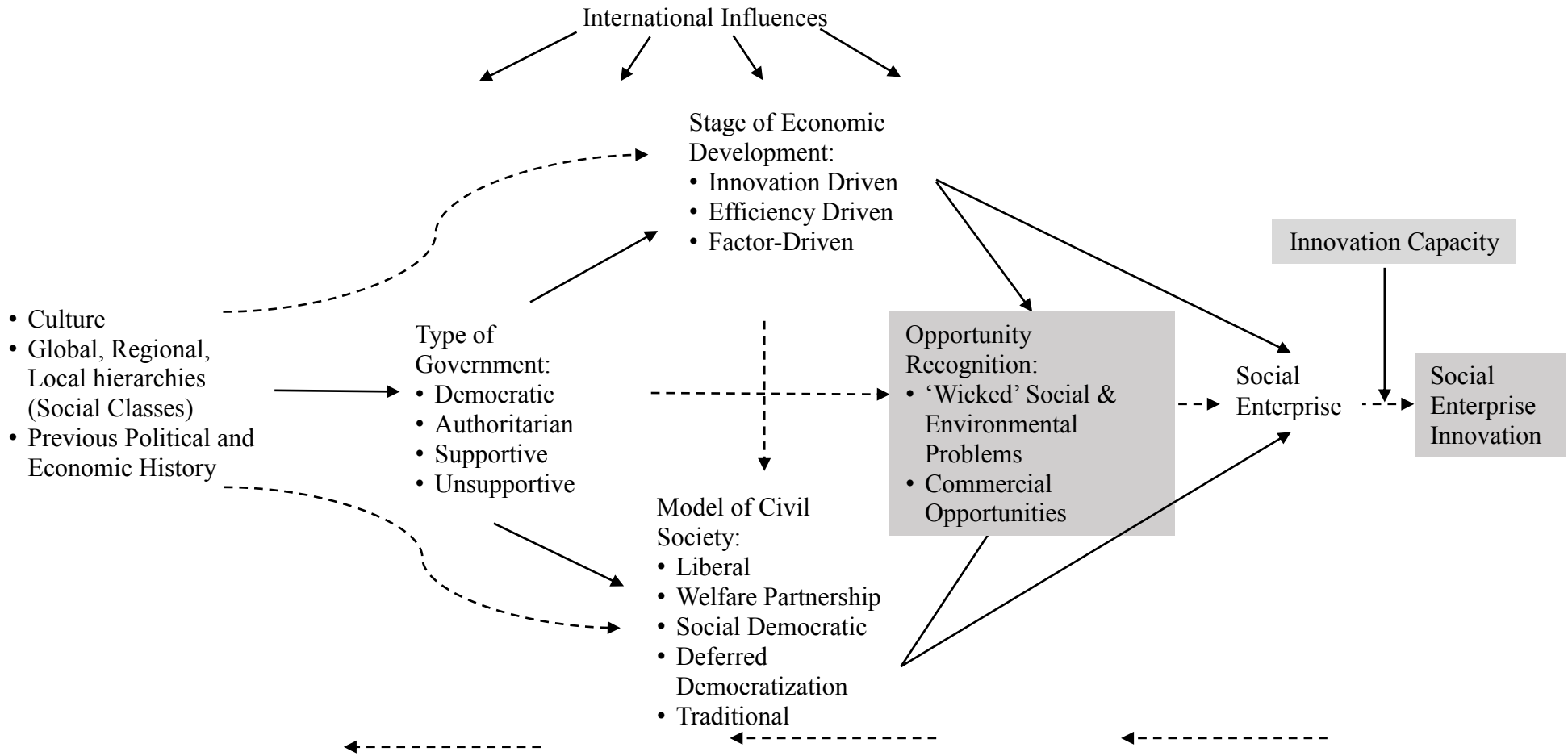
a lack of generalizability due to the overwhelming number of case studies and stories of individual social entrepreneurs (Short, Moss, & Lumpkin, 2009). Subsequently social enterprise as an organizational form has been overlooked.

Kerlin (2009, 2013) contributes substantially to the social entrepreneurship literature by not only focusing on the social enterprise organizational form, but by conducting an in-depth cross-country comparative investigation of social enterprise. Kerlin (2013) uses qualitative case study evidence to suggest that national-level institutional variables (i.e., economy type, culture, model of civil society, governance, welfare state and international factors) determine the occurrence (i.e., size) and characteristics (i.e., shape) of social enterprise organizations within a country (see Figure 1.1). In her comparative social enterprise framework, Kerlin identifies two key institutional characteristics, economy type and model of civil society and uses them to create at least five ideal type models of social enterprise. Each model is characterized by their overall size (i.e., occurrence of social enterprises within the country), and shape (i.e., percent commercial sales revenue, areas of impact) (See Table 2.2). Nevertheless, what's missing from the social enterprise literature are generalizable findings acquired via statistical analyses. This study contributes to the social enterprise literature by using established global datasets to test formal hypotheses (Hoogendoorn, Pennings, & Thurik, 2010) within both the national systems of innovation (NIS) and comparative social enterprise (CSE) frameworks.

In this study, I use the following definition of social enterprise: "the use of nongovernmental, market-based approaches to address social issues" (Kerlin, 2012, p. 91). This definition is flexible in that social enterprise characteristics (legal formation,

reliance on commercial revenue and social issue focus etc...) are allowed to vary in distinctive ways based on their institutional context. The purpose of this research is to contribute to the social enterprise and national systems of innovation literature by focusing on organizations with particularly social and/or environmental values in order to better understand the effect of different national socio-economic institutions on the size and shape of their innovations. More specifically, the NIS literature and social enterprise literature both benefit from this research in that each gains quantitative empirical support for the impact that institutions have on key organizational characteristics that can significantly impact national social and economic performance.

Figure 1.1: Country Level Institutional Processes and Causal Paths for Social Enterprise and Social Enterprise Innovation



Source: Adapted from Kerlin (2013); Areas in grey are my additions

The second aim of this research is to extend Kerlin's CSE framework on the national size and shape of social enterprise towards social enterprise innovation. Social enterprise innovation (SEI) is loosely defined as the introduction of a new product, process or marketing innovation (Tanaka, 2005) by social enterprises. I extend Kerlin's institutional CSE framework by incorporating two additional national-level constructs in order to predict variation in the size (i.e., overall number of innovative social enterprise organizations), and shape (i.e., area of impact and innovation type: product, process or marketing) of social enterprise innovation. The first is an 'entrepreneurial opportunity' construct; I hypothesize that social, environmental and/or commercial opportunities predict variation in the size and shape of SEs and SEI. The second is an 'innovation capacity' construct which draws on the expansive NIS literature. I propose that the innovation capacity of a country will also determine the size and shape of SEI. In sum, institutions and opportunities are expected not only to determine the organizational characteristics of SEs but they are also expected to contribute to social enterprise innovation.

In order to compare variations in country-level institutions and their influence on organizational structure and innovation, I conduct a comparative study of social enterprise across 54 countries representing seven world regions. I draw on the NIS and comparative social enterprise (CSE) frameworks to provide theoretical and methodological justification for this global comparative project (Kerlin, 2013; Nelson, 1993). Next, I present the primary research questions and explain whether the national-level variables identified in both the CSE and NIS frameworks predict the occurrence (size) and characteristics (shape) of social enterprise and social enterprise innovation in a country.

1.3 Research questions and analysis

This research asks four high-level research questions. The first question focusses on social enterprise. It asks if variation in the size (number of social enterprises) and shape (areas of impact and sales revenue) of social enterprise varies by country can be explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013). The second question simply reframes the first in terms of social enterprise innovation and asks if the variation in the size (number of innovative social enterprises) and shape (types of innovations: product, process or marketing) can also be explained by the same set of the set of national-level variables, but incorporating an innovation capacity. In the third question, the relationship between organizational-level characteristics and social enterprise innovation is explored (i.e., do organizational characteristics affect social enterprise innovation?). Finally question 4 asks if the relationship between organizational factors and social enterprise innovation are moderated by national-level factors. Both national-level institutional as well as opportunity (i.e., social, environmental and commercial) variables are included in each of the analyses, allowing the framework to be expanded and/or refined to include these additional constructs (See Figure 1.1). Although I had originally proposed to incorporate the use of additional opportunity variables (e.g., life expectancy, literacy, size of the urban population etc…) to investigate the relationship between national opportunities and social enterprise area of impact (i.e., health, education, community development) the number of countries (n=10) with available data on areas of impact was too small thereby preventing any further statistical analyses.

Each research question is analyzed sequentially with guiding sub-questions and hypotheses. I examine question one using logistic hierarchical generalized linear modeling (Logit HGLM), an analytical technique capable of explaining variation at one level (i.e., organizations) as a consequence of factors at another level of analysis (i.e., countries) for non-normally distributed (i.e., dichotomous outcomes. Questions two and four I examine using ordinal logistic hierarchical generalized linear modeling, the appropriate multilevel technique when the dependent variable (in this case social enterprise innovation) is ordered. However, since question 3 is about relationships exclusively at the organizational-level, I do not utilize HLM, instead I use ordinal logistic regression. A list of the research questions are presented below:

National Predictors of Social Enterprise

1. Does size and shape social enterprise (SE) vary by country? If so, how?
    1.1. Is the size of SE (i.e., occurrence of social enterprise organizations in the country) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?
    1.2. Is the shape (i.e., areas of impact, sales revenue) of social enterprise explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

National Predictors of Social Enterprise Innovation

2. Does the size and shape of social enterprise innovation (SEI) vary by country? If so, how?
    2.1. Is the size of innovative social enterprises (i.e., number of innovative SEs in the country) is explained by set of national-level variables identified in the literature (Kerlin, 2009, 2013)?
    2.2. Is the shape (i.e., innovation type: process, product or marketing) is explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

Organizational Predictors of Social Enterprise Innovation

3. Do organizational characteristics affect social enterprise innovation?

Organizational and National Predictors of Social Enterprise Innovation Combined

4. Is the relationship between organizational characteristics and social enterprise innovation the same across countries with different national factors?

1.4 Dissertation Structure

The dissertation consists of five chapters. This initial introductory chapter, summarizes the document, presents and justifies the research questions and outlines the logic used in the analysis. Chapter 2 consists of a literature review, consisting of detailed explanations of each of the main ideas presented in the introduction. In this chapter I outline the theoretical support for this study, and demonstrate how results will contribute to the literature on innovation and social enterprise. I begin with a discussion of national innovation systems with respect to entrepreneurship and economic development. I then lay out the different national level institutions and explain how these institutions shape national and organizational-level innovation. Next, I integrate the conceptual and empirical literature on social enterprise and social innovation into the innovation literature in order to construct an argument for social enterprise innovation. I follow with an outline of the research questions and hypotheses.

Chapter 3 follows by presenting the proposed methodological approach used in this study as well as the sources of data used. It also includes a section describing the data limitations and mitigation strategies. Chapter 4 analyzes the relationships between country-level factors, social enterprise and social enterprise innovation by answering the research questions and hypotheses. This chapter tests whether country-level factors do indeed affect the size and shape of social enterprise and social enterprise innovation, and

whether national institutions and/or opportunities moderate the relationship between organizational characteristics and social enterprise innovation.

Chapter 5 completes this research providing conclusions derived based on the research findings presented in Chapter 4; and discusses and compares this study's results with those in the existing social enterprise and national innovation systems literature that was reviewed in Chapter 2. Finally, Chapter 5 also provides policy recommendations for national policymakers, academics and members of the international development community and discusses avenues for future research.

CHAPTER 2

THEORETICAL BACKGROUND

2.1 Overview

This chapter reviews the literature pertaining to entrepreneurship, economic development, and innovation in the social enterprise context. The structure of the chapter as a whole focusses on two theoretical frameworks: the national systems of innovation (NIS) and comparative social enterprise (CSE). Before formally discussion each framework however, I review the relationship between entrepreneurship and economic development. I follow with a discussion of the relationship between entrepreneurship and innovation. Next, I introduce the national innovation systems framework, with particular emphasis on the role of formal and informal institutions in shaping a country's innovation system. I also identify relevant theoretical gaps in the NIS literature. I follow, with a discussion of social enterprise by bringing out both the theoretical and empirical gaps in this literature. I then provide a detailed discussion of the CSE framework including key determinants and how they shape Kerlin's models of social enterprise. I then review the social innovation and entrepreneurial opportunities literature and justify incorporating opportunity variables into the CSE framework. Finally, I define social enterprise innovation and discuss its proposed relationship with NIS and CSE institutions (including culture, economy, governance, welfare state, civil society, international aid, innovation capacity). This chapter concludes with a combined list of the research questions and hypotheses derived from this review of the literature.

2.2 Entrepreneurship and Economic Development

In the Schumpeterian tradition, economic progress is attributed to the strength of the entrepreneurial sector of the economy. Entrepreneurship is the act of discovery, evaluation and exploitation of opportunities to introduce new goods, services and ways of

doing that had not previously existed (Shane, 2007). Entrepreneurship is often cited as the primary mechanism by which emerging economies can develop (Acs, Audretsch, Braunerhjelm, & Carlsson, 2004; Nelson, 1993; Sala-i-Martin, 2010), yet the entrepreneurship literature often takes for granted the regional and institutional differences in entrepreneurship. It was once assumed that entrepreneurship was the same all over the world; however research in this area has increasingly shown that this is not the case (Acs & Szerb, 2010; Sala-i-Martin, 2010). Conceptualizations of entrepreneurship are primarily grounded in the contexts and capabilities of the industrialized world. Therefore, the study of entrepreneurship either within or across countries requires careful analysis of the intersection between entrepreneurship, institutions and economic development (Acs & Szerb, 2010).

Several empirical studies have shown that at the national level, increased entrepreneurship is associated with higher rates of employment and GDP growth (Acs et al., 2004; Thurik, 1999), however, the environment within an industrializing country context offers a different mix of opportunities and constraints for enterprises as compared to the environment of an industrialized country context. Lingelbach et al. (2005) found that in the developing country context: opportunities are broader in scope and more pervasive; entrepreneurs were found to operate at the center rather than on the fringes of the economy; competitive threats are reduced while economic, political and regulatory uncertainty increased; and the absence of financial innovation limited growth prospects of entrepreneurial firms. Moreover, these authors point out that, "entrepreneurship in developing countries is arguably the least studied significant economic and social phenomenon in the world today" (p. 1). It is essential that researchers expand

frameworks of innovation to capture an understanding of the processes involved in successful economic development in industrializing countries.

2.3 Entrepreneurship and Innovation

There is no general theory of entrepreneurship, and the term 'entrepreneur' has been used to describe innovators in policy, political science, cultural studies and individuals acting within existing organizations (Dacin, 2010; Mintrom, 1997). Entrepreneurs have been defined as catalysts of the process of innovation (Utterback, 1994); as innovators in "the search for and the exploitation of new opportunities for satisfying human wants and human needs" (Drucker, 1985, p. 28). Despite its use in a variety of academic fields, entrepreneurship has from its origins been tied to the process of innovation. Innovation is important because it is the primary means of organizational adaptation. Organizations survive in large part because of their ability to effectively adapt to changing environmental conditions (i.e., increased competition, changing market demographics, policy changes or external shocks). However, both structural and institutional factors (including the broader national, industrial and sectoral contexts) determine the extent to which an organization's innovation is effective.

The National Systems of Innovation (NIS) framework builds on these individualist conceptualizations of entrepreneurial innovation and applies them to the national context. In the NIS framework innovation is defined broadly as "the processes by which firms master and get into practice product designs and manufacturing processes that are new to them, if not to the universe or even to the nation" (Nelson & Rosenberg, 1993, p. 4). In NIS, organizations do not innovate in isolation. Organizations are made up of individuals operating and learning collectively in an environmental context to

achieve specified goals (Hatch & Cunliffe, 2006), and firms interact with other organizations such as other firms, universities, research centers, government agencies, financial institutions and so on to engage in the process of innovation. Acknowledging these external actors allows for investigation of the environmental factors that contribute to the opportunities and constraints faced by new firms in multiple economic contexts. This is especially important as organizations depend on their environment for support. Consequently, environmental factors such as national policies, laws, regulation, historical backgrounds and cultural norms all present opportunities and obstacles for increased entrepreneurial activity.

I adopt the NIS conceptualization of innovation because systems thinking recognizes innovation, like entrepreneurship, to be a process (Lundvall, 1992). However, the limitation of the NIS definition of innovation is that it is based exclusively on technological products and processes. Yet technological innovation, is just one type in a wide spectrum of innovative activity and outcomes. The term 'innovation' has been used to refer to technological and non-technological, administrative or technical, product or process and radical or incremental change among others (Damanpour, 1991). To incorporate a wide variety of innovation, I adopt the Oslo Manual[1] definition of innovation: "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business

[1] The Oslo Manual is widely recognized as the world's leading source on the collection and use of innovation data. (See http://www.oecd.org/innovation/innovationinsciencetechnologyandindustry/oslomanualguidelinesforcollectingandinterpretinginnovationdata3rdedition.htm)

practices, workplace organization or external relations" (Tanaka, Glaude, & Gault, 2005). This definition, while broader than its original conceptualization of the term,[2] is still limited in that is does not capture firm activities aimed at "accumulating capabilities for creating and using knowledge" which according to the Bogotá Manual are of considerable importance for Latin American countries and the rest of the developing world (2001, p. 47). Nonetheless the Oslo manual definition is useful because it recognizes the variety of innovation types that can emerge around the globe. This definition when coupled with a NIS perspective allows for a broader spectrum of possibilities particularly when assessing national capabilities in the industrializing country context.

2.4 National Innovation Systems and Institutions

As North argues, it is "the difference between institutions and organizations and the interaction between them that shapes the direction of institutional change" (North, 1990, p. 7). Narrow definitions of the innovation system include standard science and technology (S&T) indicators (R&D efforts and patents) as well as formal or informal organizations, institutions and networks that promote scientific and technological competence building. NIS scholars initially focused on successful industrialized economies to explain the impact of national institutions on entrepreneurial activity, to the neglect of newly industrializing countries. As Viotti puts it: "[t]he NIS' approach has contributed by adding up a specific national dimension to the Schumpeterian tradition,

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[2] An early incarnation of the Oslo manual focused on technological product and process (TPP) innovation in the manufacturing sector (Chabbal, 1990).

but it still remains focused on phenomena characteristic of the leading capitalist economies (2001, p. 4)." As the literature developed, however, students of NIS began to recognize that there is no one size fits all system of innovation. Since then, NIS scholars have stayed true to their evolutionary origins by tackling the varied institutional peculiarities facing industrializing economies (Nelson & Winter, 1982) including situating them with a broader political, cultural and historical context (Altenburg, 2009; Cozzens & Kaplinsky, 2009; Feinson, 2003; Lundvall, Vang, Joseph, & Chaminade, 2009; Sutz & Arocena, 2006).

In NIS, institutions are defined as "humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)" (North, 1991) help "reduce uncertainties, coordinate the use of knowledge, mediate conflict and provide incentive systems… they provide the stability necessary for… technical change" (Lundvall, 1992, p. 26). Institutions also provide "barriers and encouragement" to the formation, learning and forgetting of organizational routines (Nelson & Winter, 1982, p. 229). As a result, the organizations that emerge and their evolution fundamentally influence and are influenced by institutional forces. This bi-directional relationship speaks to the broad definition if innovation in NIS in which interactions between micro-level and macro-level factors are systematically linked (Altenburg, 2009; North, 1990). This relationship also illustrates the problem of endogeneity and causal claims in new institutional research (Antonakis, Bendahan, Jacquart, & Lalive, 2010; Przeworski, 2004). Institutions by definition are endogenous, that is, they are a product of the conditions that they create. The

simultaneity of these institutions and conditions, makes it seemingly impossible to separate one (cause) from the other (effect).

Likewise, while management, political science and policy scholars have for some time convinced the scientific community that 'institutions matter' (both formal and informal… see below) for national environmental conditions and organizational behavior (Crawford & Ostrom, 1995; DiMaggio & Powell, 1983; J. W. Meyer & Rowan, 1977; Nelson & Sampat, 2001; Oliver, 1991), there other sides to this debate. A number of authors contend that there are other equally viable explanations for outcomes at the national and organizational levels, including geography and resource dependence (e.g., the natural resource curse) (Gallup, Sachs, & Melinger, 1999) or power (Hickson, Hinings, Lee, Schneck, & Pennings, 1971), social structure (Stinchcombe, 1990) and embeddedness (Granovetter, 1973; Uzzi, 1997) at the organizational level. However, even if you agree with new institutionalist theory, the logical next question is: which institutions matter, to what extent and when? It is worth noting that perhaps not all institutions matter equally in all places e.g., the most important driver of innovation in Colombia may not be the most important driver of innovation in Morocco. Therefore, in the NIS literature, both formal (R&D departments, university research labs) and informal institutions (moral and socio-cultural norms) at the organizational and national levels are thought to influence the process of technical learning by organizations. Because institutions influence learning processes, and innovation directly reflects learning, innovation processes are rooted within the institutions which make-up the society (Lundvall, 1992).

Formal and Informal Institutions

National culture and history are influential informal determinants of innovation systems (Lundvall et al., 2009), contributing to the societally "divergent paths [and] disparate performance characteristics" of countries (North, 1990, p. 6). Societal culture is a multi-dimensional construct that has considerable implications on organizational decision making (House, Hanges, Javidan, Dorfman, & Gupta, 2004). Significant differentiation between cultures and individual respondent agreement within cultures has been found along all nine cultural dimensions of identified in the GLOBE study of societal and organizational values (ibid.). Cultural and historical factors have received some consideration in the NIS literature; however, less studied are the political and regulatory environment, governance systems, degree of egalitarianism and social welfare of society (Nelson, 2011). As Amartya Sen championed, incorporating these broader macro-institutional factors (as opposed to just S&T indicators) is critical for efforts to distinguish national economic growth from social welfare (Sen, 1999). These factors fall under the broad formal systems umbrella, and over time will shape informal cultural and historical factors. In addition to accounting for narrow S&T measures and metrics, the broad definition of the innovation system acknowledges the interaction of various types of formal and informal organizations, institutions, networks and learning processes. Understanding the influence that broader socio-economic institutional factors (including S&T institutions) have on different types of organizations will contribute to our understanding of the bi-directional relationship between organizations and institutions in different country contexts.

Organizational variation in the NIS framework has also been a neglected area of investigation. Most NIS studies take for granted the various types of organizations that

contribute to national economic and social welfare. In order to better understand how different socio-economic factors influence organizational performance and economic development, we must acknowledge organizational variation and its influence on innovation. This study concentrates on organizations with social goals.

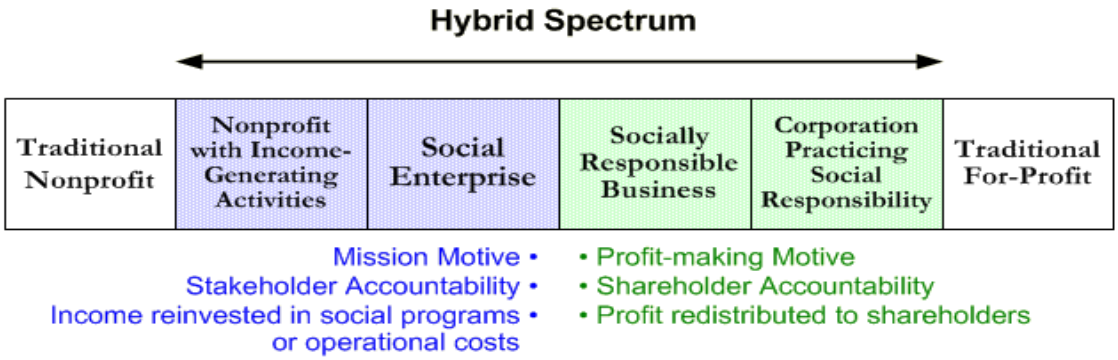
2.5 Social Enterprise

Due to the underlying economic nature of entrepreneurship, successful entrepreneurial innovations have historically been characterized by the generation of profit (Schumpeter, 1927). Yet, as the field of social entrepreneurship demonstrates, not all entrepreneurial firms are profit maximizing. Social entrepreneurs are defined as actors who apply business principles in order to solve social problems (Alter, 2007; Dacin, 2010; Zahra, Gedajlovic, Neubaum, & Shulman, 2009). Social enterprise is defined as "the use of nongovernmental, market-based approaches to address social issues" (Kerlin, 2012, p. 91). Social problems or issues are loosely defined as those long-standing societal concerns (such as poverty elimination, access to health care, decent sanitation, and quality education) that have come about as a result of neglected areas of development in industrialized and emerging nations alike. Social enterprises (SEs) are seen as different from conventional enterprises in large part because of their social issue focus (Martin & Osberg, 2007) and from non-profit organizations due to their increased financial sustainability and innovative activity (Madill, Brouard, & Hebb, 2010).

Like conventional businesses, SEs operate in multiple sectors of the economy including health, education, culture, economic development and the natural environment (Bosma & Levie, 2010). Similarly, while all organizations must consider issues of financial security and stability in order to survive, what is not shared is their level of

commitment to the profit motive (Anheier & Ben-Ner, 2003; Dees, 2001; Light, 2008). This variation is best illustrated in the social enterprise spectrum provided by Alter (2007) which classifies the various organizational types and formations of social enterprises (See Figure 2.1). This spectrum distinguishes types of enterprise based on the level of commitment to three factors: motive, accountability and use of income. This is consistent with Weerawardena and Mort's (2006) conclusion that "social entrepreneurship is a bounded multidimensional construct that is deeply rooted in an organization's social mission, its drive for sustainability and highly influenced and shaped by the environmental dynamics" (pg 22).

Figure 2.1: Hybrid Entrepreneurship Spectrum



On the right are for-profits including conventional for-profit organizations and firms practicing corporate social responsibility, on the left are non-profit organizations including conventional non-profits and non-profits that generate earned income. For profit firms have profitability (economic value creation) as their primary motive where they are under some obligation to redistribute that profit among shareholders. Non-profits have social mission (social value creation) as their primary motive as dictated by their stakeholders. The value orientation (i.e., economic, social and/or environmental) of an organization reflects the extent to which achieving impact in that area determines the

success of the organization, it is also what attract and retain talent, customers and investors (Hull & Lio, 2006; McDonald, 2007). Thus, the mission of an organization emphasizes the most important values of the enterprise, providing insight into the overall purpose of the organizations' existence. In addition to mission, revenue generating activity is also reflected in this spectrum. For example, Alter's 'traditional' non-profits do not engage in income generating activity (i.e., they do not sell goods or services and therefore receive all of their funding from membership or grants). On the other end of the spectrum are conventional for-profits which earn all of their revenue from sales. As we move from left to right, these organizations become increasingly reliant on market revenue (i.e., sales of goods and services). Thus, the typology depicted above demonstrates that not all entrepreneurs seek the same ends, and not all firms are profit maximizing (Elkington & Hartigan, 2008). As a result, classifying social enterprises will require defining them according to their goals and practices. In this study, I define social enterprise as both non-profits with income generating activity, as well as social enterprises as shown on the spectrum.

Theoretical and Methodological Contributions

Much of the scholarly literature on social enterprises has been limited to the documentation of intriguing case studies (e.g. Grameen Bank) and stories of individual social entrepreneurs (e.g. David Green). Thus, while the relevance of social entrepreneurship is well established (Dart, 2004; Dees, 2007; Mair, 2006; Short et al., 2009), from a theoretical and methodological perspective the field is in a nascent stage (Hoogendoorn et al., 2010; Nicholls, 2010; Young, 2012). As an initial attempt at theory construction, authors have provided compelling arguments for definitions of social

entrepreneurship and typologies that categorize the various types of social enterprise (Haugh, 2012). These arguments are often based on profit or non-profit status, value orientation (i.e., social and/or profit motives) or hierarchically in terms of degree of social change (Zahra et al., 2009). Some identify social enterprises according to principles of market supply and demand (Young, 2007), others classify them as a *bricoleurs*[3] (Di Domenico, Haugh, & Tracey, 2010; Zahra et al., 2009) and focus on the individual entrepreneur as their unit of analysis. As a result, Light argued that within the social entrepreneurship literature there is "a bias[ed] tendency to ignore the role of organizations and the resources they provide for pattern-breaking change" (Light, 2005, p. 48). The calls for comparative cross-country research are mounting (Chell, Nicolopoulou, & Karataş-Özkan, 2010), with comparative studies of social enterprise being rare, with few exceptions (Borzaga & Defourny, 2001; Defourny & Nyssens, 2012; Gidron & Hasenfeld, 2012; Kerlin, 2006, 2013, 2009).

Using empirical data from in-depth case studies, and linking them to global quantitative indices, Kerlin compared social enterprises across seven world regions and countries and found that as an organizational form, social enterprise varied in predictable ways (Kerlin, 2009). Sources of variation were attributed to a combination of socio-economic factors (GDP, international aid, education spending, corruption perception, civil liberties activity and state capabilities)

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[3] *Bricolage* is a French term used to describe a process of making do with what you have in order to create a piece of work. A person engaging in *bricolage* is known as a *bricoleur*.

which in turn shaped organizational characteristics (outcome emphasis, program area focus, legal framework and organizational type, social sector and strategic development base) of the social enterprises in each geographical setting. Extending this work, she uses national institutional variables (civil society, governance, welfare spending, culture and economy) to develop five models of social enterprise: sustainable subsistence, autonomous mutualism, dependent focused, autonomous diverse and enmeshed focused (Kerlin, 2013). Each SE model is shaped by the characteristics of the national environment. I briefly describe each model with more in-depth explanations to follow. In the sustainable subsistence model, social enterprises are aimed at providing poverty relief though self-employment. In the autonomous mutualism model the size of the social enterprise sector is large, as they step in to fill gaps left by economic markets and government welfare. In the dependent focused and enmeshed focused models the social enterprise setcor is smaller due to the large size of the welfare state. Finally, in the autonomous diverse model, social enterprises operate in a wide variety of sectors due to their relative autonomy from the state.

In the following section I discuss the models of civil society and economic stages both of which are key to determining models of social enterprise. I then describe the models of social enterprise and end with a comprehensive discussion of all the variables in this study and their operationalization in Chapter 3.

Models of Civil Society

Civil society is defined as all informal and formal, religious and secular, member and public-serving organizations performing expressive (i.e., advocacy, cultural expression, community organizing, environmental protection, human rights, religious,

religion, representation of interests, political expression) or service (i.e., provision of health, education or welfare) functions (cite). Salamon and Sokolowski (2009; 2010) developed five models of civil society: Liberal; Social Democratic; Welfare Partnership; Deferred Democratization; and Traditional. Next, I briefly describe each model and provide a list of core and borderline countries identified by Salamon and Sokolowski (2010).

- Liberal: In the Liberal model, there is a large nonprofit sector supported by fee-based income and philanthropic gifts and less so by government (Core: Argentina, Chile, Denmark, New Zealand, Switzerland, United Kingdom, United States; Borderline: Canada, Australia).
- Welfare Partnership: This pattern is characterized by an unusually large civil society sector heavily engaged in service and supported by the government (Core: Belgium, France, Germany, Ireland, Israel, Netherlands; Borderline: Italy. Portugal, Spain).
- Social Democratic: In this instance, the pattern is characterized by a large state presence and support for social welfare spending and a relatively small NGO employment sector (Core: Austria, Finland, Norway, Sweden).
- Deferred Democratization: In this pattern the overall size of the sector is constrained, volunteer share of the civil society workforce is small and expressive functions are low (Core: Brazil, Colombia, Poland, Slovakia; Borderline: Czech Republic, Hungary, Japan, South Korea, Mexico, Peru, Romania).
- Traditional: Civil society is arguably the smallest in this pattern. Traditional civil society models are characterized by low levels of government spending (less than 10 percent of GDP), coupled with a large relative share of the volunteer workforce (56 percent on average) relative to the overall size of the workforce which is also very small (less than 2 percent of the economically active

population). (Core: Pakistan, Philippines, Tanzania, Uganda; Borderline: India, Kenya, South Africa).

These authors argue that the socio-political forces that shape political, governance and national welfare policy also shape the civil society sector. The models were developed based on different dimensions of the civil society sector. They use six key factors to identify patters in of civil society across 40 countries. These include the overall size of the sector in relation to the national economy (1), the share of workforce accounted for by volunteer staff (2), the relative role of government financing (3) philanthropy (4), fee income (5) and lastly the service v.s. expressive share (i.e., advocacy, sports, recreation, and culture) of nonprofit activity (6). Not all countries fit squarely into each model (i.e., core countries), there are also borderline cases in which some but not all of the key characteristics are exemplified. Table 2.1 displays the key characteristics of each model where key determinants are shaded in grey:

Table 2.1: Models of Civil Society Sector Structure

Model	**Dimension**				
	Workforce Size	**Volunteer Share**	**Government Support**	**Philanthropic Support**	**Expressive Share**
I. Liberal	Large	Medium - high	Medium - small	Medium - high	Smaller than service
II. Welfare Partnership	Large	Low - medium	High	Low	Smaller than service
III. Social Democratic	Large	High	Medium	Medium	Larger than service
IV. Deferred Democratization	Small	Low	Low		Prof-high; Advocacy-low
V. Traditional	Small	Medium - high	Low		Medium

Source: Salamon & Sokolowski (2009)

Economic Stages of Development

National conditions for economic and entrepreneurial growth are shaped by the institutional make-up of a country. The World Economic Forum's (WEF) Global Competitiveness Index (GCI) calculates the relative competitiveness of a country by drawing on 12 measures or 'pillars[4]' (Sala-i-Martin, 2010). The Global Competitiveness Index (GCI) is constructed from these pillars and used to construct a typology of economic development aimed at assessing the overall competitiveness of a country. Countries are then classified into groups or stages according to their scores on each of these dimensions. The first economic stage is known as the Factor-driven (FD) economy. FD economies are predominantly extractive in nature (i.e., mining, fossil fuels etc…) and have low levels of infrastructure. Subsequently entrepreneurship in FD economies is mostly necessity-based, as workers create self-employment opportunities for survival. Efficiency-driven (ED) countries are characterized by their higher education focus and training of personnel, resulting in a large small and medium sized manufacturing industry. Lastly, the innovation-driven (ID) stage is characterized by greater amounts of wealth and by enterprises that compete through the introduction of innovative goods and processes.

Kerlin (2013) argues that civil society and economic stage of a country are two of the most influential factors that determine the size and key characteristics of the social enterprise sector in a country. However, as Figure 1.1 illustrates, additional factors including culture, political history and international impacts also influence SE models.

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[4] According to the World Economic Forum, the twelve pillars of competitiveness are: institutions (legal and administrative framework); infrastructure; macroeconomic stability; health and primary education; higher education and training; goods market efficiency; labor market efficiency; financial market sophistication; technological readiness; market size; business sophistication and innovation.

Next, I illustrate how according to Kerlin, these models and factors contribute to these "ideal type" patterns of social enterprise in any given country.

Models of Social Enterprise

Kerlin's models of social enterprise build upon the models of civil society and economic stages models mentioned above. Social enterprise models are identified based on the following characteristics: "variation by impact" which is the degree of variation among social enterprises with respect to the actual areas of impact (i.e., arts and culture, environment, education, health etc…) as well as the extent of their reliance on commercial revenue. There are also individual level characteristics associated with social enterprise, including entrepreneurial motivation (Shane, Locke, & Collins, 2003) such that the social enterprise may vary in its impact or organizational make-up based on necessity-based or opportunity-based entrepreneurial motives. Necessity-based entrepreneurs turn to entrepreneurship as a 'last-resort' because the supply of other work options are either unavailable or inadequate. Whereas opportunity-based entrepreneurs choose to become entrepreneurs despite the presence of other acceptable work options (Sala-i-Martin, 2010; Wennekers, van Stel, Thurik, & Reynolds, 2005). According to Kerlin (2013), these 'need-based' social entrepreneurs are more prevalent in traditional civil societies and factor-driven economies[5], an environment which then leads to smaller enterprises focused primarily on poverty alleviation for the entrepreneur (See Appendix A for a table detailing the characteristics of the Social Enterprise Models).

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[5] Factor-driven economies are driven by basic infrastructure needs including macroeconomic stability, health and primary education and dependent on natural resource extraction (Sala-i-Martin, 2010).

Descriptions of the five models of social enterprise Kerlin's (2013) are provided below. Table 2.2 demonstrates how two of these institutions (i.e., the models of civil society and economy types) directly shape the patterns of social enterprise in a given country.

Table 2.2: Models of Social Enterprise

		Economy		
		Factor-driven	**Efficiency-driven**	**Innovation-driven**
Civil Society	**Liberal**	_	_	**Autonomous Diverse** Ex. United States
	Welfare Partnership	_	_	**Dependent Focused** Ex. Italy, Germany
	Social Democratic	_	_	**Enmeshed Focused** Ex. Sweden, Austria
	Deferred Democratization	_	**Autonomous Mutualism** Ex. Argentina, Ukraine	(Transitional) Ex. Slovak Republic
	Traditional	**Sustainable Subsistence** Ex. Zimbabwe, Uganda	(Transitional) Ex. South Africa (B)	_

Note: B = Borderline country for model of civil society
Source: Kerlin (2013)

Sustainable Subsistence

In the Sustainable Subsistence model (Factor / Traditional) necessity based social enterprises are aimed at providing poverty relief though self-employment. Activities are

often supported by international aid often in the form of microfinance institutions (MFIs). Social enterprises in this model are also heavily reliant on commercial revenue because of the lack of provisions from the state and lack of philanthropic support. On the other hand, the collectivist culture in these societies (e.g., Zimbabwe) leads to increased social innovation and enterprise (Kerlin, 2009, 2013).

Autonomous Mutualism

In the Autonomous Mutualism model (Efficiency / Deferred Democratization) civil society steps in to fill gaps left by economic markets and government welfare. During the economic downturn, the state provided ample space for the emergence of mutual benefit forms of organization. As a result the size of the social enterprise sector is larger than in other models. These countries (e.g., Argentina) also rely less on international assistance and social enterprises draw on a wide array formal and informal resources to run their operations. They often take on the form of small SMEs with the exception of a few large-scale manufacturing facilities, all of which provide needed services and employment.

Dependent Focused and Enmeshed Focused

Due to the large welfare states governing the Dependent Focused (Innovation / Welfare Partnership) and Enmeshed Focused models (Innovation / Social Democratic) models, the space is narrow for social enterprises to operate. As a consequence, social enterprise is often associated with those services that have been "popularized and supported by the state" (Kerlin, 2013, pg. 95) both in terms of government subsidies and supportive policies. In the Enmeshed Focused model however, there are even fewer, and less diverse kinds of social enterprise than in the Dependent Focused model because

social enterprises are mostly tied up in government policy programs. In the Dependent Focused model (e.g., Italy) social enterprises operate work-integration programs in response to unemployment later championed by the state. Enmeshed Focused (e.g., Sweden) have a smaller nonprofit sector which is focused on a few sectors including culture, adult education and sports, because social services including health and education are all provided for by the state. In addition, social enterprises that overlap with government policies will experience a higher degree of financial and in-state support.

Autonomous Diverse

In the Autonomous Diverse (Innovation / Liberal) model social enterprises operate across multiple sectors, due to their relative autonomy and the smaller size of the welfare state. As a result these countries have policies that favor the growth of the non-governmental private sector, thus encouraging entrepreneurial approaches to resolving social problems. In these countries (e.g., United States) commercial revenue generation is encouraged to support financial sustainability, and innovation is reflected through a wide variety of types of social enterprise.

Extending the Comparative Social Enterprise Framework

Drawing on the Comparative Social Enterprise (CSE) framework and models of social enterprise (Figure 1.1 and Table 2.2) developed by Kerlin (2013), I extend the comparative social enterprise framework to include social enterprise innovation by incorporating a country-level 'opportunity' variable as well as an 'innovation capacity' variable. The central premise is that variation within and across countries (institutions

and opportunities) determine the size (number or innovative social enterprises) and shape (types of innovations) of innovative social enterprises in different country contexts.

Unlike the ill-defined concept of social innovation (Murray, Caulier-Grice, & Mulgan, 2010), social enterprise innovation (SEI) is defined as the introduction of "new or significantly improved products, processes, marketing methods, or organizational methods in business practices, workplace organization or external relations which aim to address failures in the production, availability and consumption of public value[6] goods defined as that which is broadly of societal benefit within a particular normative and culturally contingent context." Social enterprise innovation is based on three central components: the organizational characteristics of social enterprise, which are in turn shaped by macro-institutional factors including the innovative capacity and entrepreneurial opportunities (both social and commercial) of the home country (see Figure 1.1).

Kerlin (2009, 2013) justifies the development of the five models of social enterprise by drawing links between social enterprise and macro-institutional factors including: international aid, public welfare spending (health and education), corruption, civil society; along with culture, governance (e.g., corruption, laws and regulation) and economy type. In this study these institutions are expected to not only determine the organizational characteristics of SEs but they are also expected to contribute to social enterprise innovation (SEI). However, in order to describe and position social enterprise innovation as a product of social enterprise, I briefly review of the social innovation

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[6] Public values are defined as "those providing normative consensus about (a) the rights, benefits, and prerogatives to which citizens should (and should not) be entitled; (b) the obligations of citizens to society, the state, and one another; and (c) the principles on which governments and policies should be based" (Bozeman, 2007). 'Public value good' is more appropriate than the term 'public good' which has well known and strict economic meaning (Varian, 2005). According to Bozeman (2002) public value failures exist when certain essential human values are left unmet by otherwise efficient markets and effective government actions.

literature before describing how Kerlin's models of social enterprise might extend to models of social enterprise innovation.

2.6 Social Enterprise Innovation

2.6.1 Recognizing Problems as Opportunities

Social innovation is arguably the least well understood member of the social entrepreneurship conceptual family. It has no agreed upon definition (Mulgan, Tucker, Ali, & Sanders, 2007; Murray et al., 2010) as the concept of innovation alone is not well understood by social enterprise scholars (Nicholls & Murdock, 2012). The Skoll Foundation defines social innovation as "new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations. In other words, they are innovations that are both good for society *and* enhance society's capacity to act" (Murray et al., 2010, p. 3). Nicholls and Murdock (2012) present a number of definitions including this one: "social innovation is defined… as varying levels of deliberative change that aim to address suboptimal issues in the production, availability, and consumption of public goods defined as that which is broadly of societal benefit within a particular normative and culturally contingent context" (p. 7). However, before 'suboptimal issues' can be addressed, they must be recognized by those willing and able to exploit them.

Opportunity recognition is central to entrepreneurship encompassing the act of opportunity discovery as well as opportunity creation (Alvarez & Barney, 2007; Baron, 2006; Dyer, Gregersen, & Christensen, 2008; Ozgen & Baron, 2007; Shane, 2007; Shane & Venkataraman, 2000). In the conventional entrepreneurship literature, opportunities

are defined as "a situation in which a person can create a new means-ends framework for recombining resources that the entrepreneur *believes* will yield a profit…" (Shane, 2007, p. 18, emphasis in original). Opportunities for social enterprise must be defined broadly to encompass profit as well as non-profit goals. According to Nicholls and Murdock (2012), social innovation is "the answer to social market failures" and it is the combination of market and non-market failures that provide the opportunities for social innovation" (p. 17). Unlike market failures[7], social market failures would result when social needs are unmet by existing institutional arrangements. Likewise, Kickul and Lyons (2012) tell us that in order for social innovation to occur, windows of opportunity created out of the convergence of critical streams (Birkland, 2005; Kingdon, 1995) must exist to allow social entrepreneurs to exploit the commercial wants and social needs of society. These opportunities, when exploited at the right time lead to favorable outcomes such that "the social entrepreneur can provide maximum benefit to her or his customer before circumstances change, diminishing the value of the service" (Kickul & Lyons, 2012, p. 48). The streams may consist of political, policy, demographic or other environmental shifts that when aligned make social opportunities more recognizable to entrepreneurs in search of them. Therefore, the opportunity dimension is conceivably the 'most distinct' between social and commercial enterprise "owing to fundamental differences in missions and response to market failure" (Austin, Stevenson, & Wei-Skillern, 2006, p. 6).

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[7] See Varian (2005) for a discussion on market failures. See also Wolf (1979) and Bozeman (2002) respectively for a detailed discussion of government and public value 'non-market' failures.

Unlike profit maximizing entrepreneurs (Drucker, 1985), social entrepreneurs seek out opportunities to respond to 'wicked' and 'intractable' social and environmental problems (Cannatelli, Masi, & Molteni, 2012; Zahra, Rawhouser, Bhawe, Neubaum, & Hayton, 2008). These problems "highlight… the failure of conventional solutions and established paradigms entrenched in intractable institutional settings across all three conventional sectors of society: private sector market failures, public sector siloed thinking; a lack of scale in and fragmentation across civil society" (Nicholls and Murdock, 2012, p. 8) and "the opportunities for social innovation will be heavily shaped by: prevailing types of institution and industry;… technologies;… the availability of freedom or spare capital [however,…] the motivations for social innovation will usually come from tensions; contradictions; dissatisfactions; and the negation of what exists" (Mulgan, 2012, p. 60). In sum, social entrepreneurs seek out opportunities to exploit social and environmental problems. Next, I discuss how the national-level institutions used in constructing Kerlin's models of social enterprise, can be extended to explain national patterns of social enterprise innovation.

2.6.2 Institutions and Social Enterprise Innovation

In light of definitions on social innovation (Nicholls & Murdock, 2012) and conventional innovation (see Oslo Manual), again, I define social enterprise innovation as a new or significantly improved product (good or service), process, new marketing method, or new organizational method in business practices, workplace organization or external relations which aim to address failures in the production, availability and consumption of public value goods defined as that which is broadly of societal benefit within a particular normative and culturally contingent context. However, institutions affect innovation differently and for different reasons (Sud, VanSandt, & Baugous, 2009). A summary of the innovation outcomes expected from different combinations of

the institutions identified in Kerlin (2009, 2013) and opportunities are provided below. These proposed relationships are in alignment with the models of social enterprise described in Kerlin (2013), as well as the NIS literature.

Social Enterprise Innovation and Culture

National culture is an informal institution capable of shaping organizational level innovation. House et al., (2004) developed nine dimensions of culture and found that values and practices varied significantly by country clusters along each dimension. In NIS, culture is attributed with providing structure and guidance for learning behavior and outcomes which in turn influence the absorptive capacity[8] of the country (Cohen & Levinthal, 1990). Collectivism promotes innovation through increasing the variety of ideas through "leveraging… resources internally and through external ties" (Kerlin, 2013, pg. 92). Individualistic cultures emphasize goal achievement that prioritize individual and organizational needs, as opposed to larger collective, community-based or societal needs (Hofstede, 1980; House et al., 2004). Likewise, cultures with low uncertainty avoidance (as opposed to risk averse cultures), report higher rates of innovative activity than societies that are less tolerant of uncertainty (House et al., 2004). As a result, Kerlin incorporates this uncertainty avoidance construct into her model, which measures the degree to which individuals seek order, consistency, structure, formal procedures and laws (House et al., 2004). These two culture dimensions (i.e., in-group collectivism and

[8] Cohen and Levinthal (1990) define absorptive capacity is the ability of an organization irmrecognize, assimilate and apply the value of new information for commercial ends.

uncertainty avoidance) are expected to influence social enterprise as well as social enterprise innovation[9].

Social Enterprise Innovation and Economy Type

Stages models of development are used to determine the economic competitiveness of a country (Porter & Sheppard, 1998). Stage models are also consistent with the new economic knowledge and innovation systems literature (Nelson, 1993) and are highly influential, guiding politics and policy at the national and international level (Cammack, 2006). According to this stages model of development, Innovation-Driven countries are likely to be the most technologically innovative followed by Efficiency-Driven and lastly, Factor-Driven economies. However, this stages model does not account for non-technological innovations, such as, marketing or process innovations. Social enterprises in factor-driven economies may be less likely to produce product innovations than other economy types, but it remains to be seen how stages explanations translate into non-technological, process or marketing based innovations.

Social Enterprise Innovation and Governance, Welfare State and Civil Society

Innovative businesses are less likely to develop in countries where government or political instability puts undue risk on the ability of the organization to operate successfully. A positive perception of the state's ability to develop and implement policies and regulations aimed at promoting the private sector, would lead to greater innovation. On the other hand, the extent to which a country is perceived to allow for

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[9] Kerlin (2013) makes an argument that there is reason to believe both high and low collectivism could contribute to innovation, while either relationship is plausible, I hypothesize the latter.

more citizen engagement, participation, freedom of expression and media may also lead to a greater diversity of knowledge which would lead to increased innovative activity across the board, and particularly in social sector organizations whose political views are more likely to differ from the dominant political voice and which reflect a broader range of interests. A strong civil society sector is a sign of a healthy non-profit sector. Because social enterprises rely on many of the same institutions as the non-profit sector, a strong non-profit sector would be conducive to social enterprise development (Salamon & Sokolowski, 2009). Social enterprises and non-profit organizations are more likely to emerge and to be encouraged in societies with relatively low social welfare spending and like the U.S. (Kerlin, 2013; Salamon & Anheier, 1998). The typology of civil society developed by Salamon and Sokolowski speaks to the role of government in determining the relative size of the non-profit sector, employee composition (i.e., volunteers) and sources of revenue of these organizations (2009). As in the situation of the models of social enterprise, I suspect that the type of government (level of support for social enterprise and/or innovation) and the degree to which social needs are met by welfare state also influence the degree to which social enterprises innovate, the types of innovations (i.e., product, process, marketing) and the impact areas of those innovations.

Social Enterprise Innovation and International Aid

Kerlin (2013) argues that international aid is a positive resource support for social enterprise. Innovation can also be shaped either directly or indirectly by international aid. International aid has been highly criticized for its counter-productive if not damaging 'results' (Easterly, 2006; Ferguson, 1990). In fact, social enterprise has been championed as the solution to international aid because social enterprise carries with it the notion of increased accountability, responsibility and self-sufficiency on the part of its (former 'recipients') owner/adopters (Anderson & Dees, 2008). Whether social enterprise is capable of resolving the issues that international aid was unsuccessful in

resolving is a much larger question that cannot be covered here. What we do know is that international NGOs, many of which are funded by the development banks and development agencies, can become highly influential actors in their host countries, capable of directing the size and shape of local organizations and subsequently their innovative activity.

Social Enterprise Innovation and National Innovation Capacity

According to Cassiolato and Lastres, "Innovation capacity derives… from the confluence of specific social, political and institutional and cultural factors and from the environment in which economic agents operate" (Cassiolato & Lastres, 2011). In NIS firms are essential to national innovation, with university and government institutions playing key support roles. Universities act as the drivers of human capital capacity as well as scientific research and development (R&D). Publicly funded universities are by extension government led interventions aimed at stimulating development through scientific and scholarly pursuits. Patents, the STEM educated workforce and R&D expenditure, are common indicators used to determine if the NIS is functioning like the highly industrialized nations or the extent to which states seek to promote innovation for economic growth (Johnson, Edquist, & Lundvall, 2003). Social enterprise innovations may not respond to these same incentives, likewise standard science and technology (S&T) indicators may or may not effectively predict social enterprise innovation. By combining our knowledge of the institutional drivers of innovation with Kerlin's models of social enterprise, I explore extending models of social enterprise to social enterprise innovation (again see Figure 1.1 above).

2.6.3 Organizational Characteristics and Innovation

Organizational characteristics also shape the innovation process of firms[10] (Damanpour, 1991). An organization is defined as "a set of stable social relations deliberately created, with the explicit intention of continuously accomplishing some specific goals or purposes" (Stinchcombe, 1965, p. 127). Organizations survive in large part because of their ability to effectively adapt to changing environmental conditions (i.e., increased competition, changing market demographics, policy changes or external shocks). Innovation is the means of organizational adaptation. However, both structural and institutional factors (including the broader national, industrial and sectoral contexts) determine the extent to which an organization's innovation is effective.

Organization Size, Age and Innovation

The impact of organization size and age on innovation is mixed. While Meyer (1972) found that size significantly influenced organizational characteristics, Damanpour in his meta-analyses produces mixed results to the effect or size on innovation (1991). Nevertheless, smaller enterprises have been shown to spend more on new products than on new process R&D, suggesting the greater potential risk and return of product innovations (Fritsch & Meschede, 2001). Similarly, these authors found that only large enterprises (more than 10K employees) dedicated proportionally more of their budget to process as opposed to product R&D. On the other hand, Dougherty & Hardy (1996) found that large mature organizations have difficulty achieving sustained innovation because of conflicting power dynamics at the systematic level between new competencies and deeply entrenched organizational routines.

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[10] I use the terms firm, organization and enterprise interchangeably here.

Organizational Ownership and Innovation

Non-profits and for-profits are said to behave differently from one another because of ownership-related differences (Hull & Lio, 2006). Previous studies have investigated whether core legal (government-owned vs. private-owned) or the multi-dimensional 'publicness' approach (public vs. private characteristics) is better at explaining behavior of innovative organizations (Bozeman & Bretschneider, 1994). Yet the empirical evidence on ownership-related differences (non-profit vs. for-profit) to innovation is inconsistent (DiMaggio & Anheier, 1990; Schlesinger, 1998). Goel (2004) demonstrated that when comparing profit maximizing and operating profit-maximizing organizations (i.e., not-for-profit firms) in the adoption of cost-reducing process innovations, non-profits out performed for-profits in terms of research expenses and production levels and that non-profits produced research in excess of socially optimal levels. Schlesinger (1998) used national survey data on hospital administrators of psychiatric facilities in the U.S. to test several ownership hypotheses and found weak evidence that non-profit hospitals offered a less innovative set of services than for-profit hospitals. He found that under conditions of low competition, and limited professional influence non-profits were "distinctly more innovative than their for-profit counterparts and also more likely to establish contracts with the private sector" (Schlesinger, 1998, p. 109).

Organizational mission also has a direct impact on the innovation process. McDonald found that non-profit hospitals were more likely to innovate if they had a clearly defined and motivating mission (McDonald, 2007). However, once established, stakeholders who are aligned with that mission are arguably more likely to resist core, value changing innovations (Dees, 1998). Therefore, whether an organization innovates or not, as well as what they innovate and how, are all dependent on the ownership characteristics of the organization.

Non-profits are arguably less likely to adopt product innovations than for-profits (Hull & Lio, 2006; Weerawardena, McDonald, & Mort, 2010). Hull and Lio argue that non-profits "discourage product innovation due to the basic level of the services provided (feeding the poor remains much the same process it was a millennium ago)," as well as the high cost, and unclear financial returns of investments (p. 62). However, empirical evidence for this assertion is non-uniform. Generally speaking product innovations are more expensive than process innovations, however, in their sample of 1800 German firms, Fritsch and Meschede found that even in the smallest possible organization (i.e., one employee) approximately 12 times the amount of resources are spent on product than on process innovations (2001). On the other hand, non-profit hospitals have been shown to take on product innovations at a comparable rate to for-profit hospitals (Romeo, Wagner, & Lee, 1984).

Managing risk is of great importance to nonprofit (Weerawardena & Mort, 2006; Young, 2009) and for-profit institutions because mitigating risk provides protection (i.e., from lawsuits and liabilities) and clarifies options (i.e. sustainable from unsustainable behavior) with the aim of reducing financial uncertainty (Kirkman, 2012). Bozeman and Kinglsey, for example, found that trust and a clearly defined mission resulted in a positive risk culture for public organizations (Bozeman & Kingsley, 1998). Risk-taking is also positively associated with innovation (Damanpour, 1991). Non-profit organizations are assumed to be more risk averse than for-profit firms and thus non-profits lack sufficient incentives to engage in research and development (Hull & Lio, 2006). Likewise, non-profits are less able to afford expert internal labor, rely heavily on volunteers, and concern themselves with financial sustainability as opposed to growth and expansion (Dees, 1998; Hull & Lio, 2006). Therefore, instead of adopting high risk innovations, non-profits "…greatly reduce potential risk by adopting innovations already proven in the market, or by sharing the risk with another organization in a cooperative venture" (Hull & Lio, 2006, p. 62).

Resources and Innovation: Sources of Revenue & Volunteers

Kerlin and Pollack (2011) demonstrated that over the past 20 years, U.S. non-profits have replaced traditional funding sources (i.e., private contributions and government grants) with earned-income activities in the face of increased competition by other non-profit enterprises as opposed to reduced amounts of funding from the government. Their evidence lends support for the theory of institutions at an organizational-level, shedding light on why social organizations adopt commercial-like behaviors (i.e., selling goods and services). These social enterprises, that by definition perform earned-income activities, may be more innovative than their traditional non-profit counterparts due to increased financial security associated with commercial-like behavior and/or their increased willingness to engage in risk-taking behavior (Anderson & Dees, 2008).

Labor is another critical resource for organizations. Like Dees (1998), Hull & Lio argue that the likelihood of innovation is reduced in non-profit organizations because of the large number of volunteers: "[t]hough considerable resistance to innovation may exist among for-profit employees, it is likely to be all the greater among non-profit employees" (2006, p. 59). Specifically they argue that volunteers are more likely to view innovations as threatening to, as opposed to supportive of the organizations' social mission. Social enterprises may or may not have volunteers as a part of their workforce, in this study I explore the impact of volunteers on social enterprise innovation.

2.7 Research Questions and Hypotheses

To summarize, institutions and opportunities at the national level determine the organizational characteristics of social enterprises (SE), but the organizational characteristics of social enterprises are also expected to contribute to social enterprise

innovation (SEI). I investigate the extent to which institutions, opportunities and organizational characteristics shape social enterprise and social enterprise innovation by posing the following research questions. The hypotheses can be further broken down by national vs. organizational-level effects. The first and second set of hypotheses pertain to the influence of national predictors on social enterprise and social enterprise innovation respectively. The third set investigate organizational characteristics and their influence on social enterprise innovation. The fourth and final set asks about interaction effects between these national and organizational-level predictors of social enterprise innovation.

National Predictors of Social Enterprise

1. Does size and shape social enterprise (SE) vary by country? If so, how?
    1.1. Is the size of SE (i.e., number of social enterprise organizations in the country) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?
        1.1.1. There will be more SE in countries with a strong civil society sector; strong governance system, low uncertainty avoidance and collectivist values; high economic competitiveness; and more international aid.
        1.1.2. There will be more SE in countries with greater economic market strength.
        1.1.3. There will be more SE in countries with greater unmet social and/or environmental needs.
    1.2. Is the shape (i.e., areas of impact, sales revenue) of social enterprise explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

National Predictors of Social Enterprise Innovation

2. Does the size and shape of social enterprise innovation (SEI) vary by country? If so, how?

2.1. Is the size of social enterprise innovation (i.e., number of innovative SEs in the country) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

2.2. Is the shape (i.e., innovation type: process, product or marketing) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

2.2.1. Social enterprise innovation will be highest in countries with a strong civil society sector; strong governance system, low uncertainty avoidance and collectivist values; high economic competitiveness; high innovation capacity and more international aid.

2.2.2. There will be higher social enterprise innovation in countries with economic market strength.

2.2.3. There will be higher social enterprise innovation in countries with more unmet social and/or environmental needs.

Organizational Predictors of Social Enterprise Innovation

3. Do organizational characteristics affect social enterprise innovation?

3.1. There is a positive relationship between innovation and revenue from sales.

3.2. Necessity-based social enterprises will be less innovative than opportunity-based social enterprises.

3.3. There is a negative relationship between the number of volunteers and social enterprise innovation.

Organizational and National Predictors of Social Enterprise Innovation Combined

4. Is the relationship between organizational characteristics and social enterprise innovation the same across countries with different national factors?

4.1. There is a positive relationship between innovation and revenue from sales and this relationship will increase with the market strength of the country.

4.2. Necessity-based social enterprises will be less innovative than opportunity-based social enterprises and this relationship will be strengthened in factor-driven economies.

2.8 Summary

This study extends prior comparative research in social enterprise and innovation because it uses established global datasets to test formal hypotheses (Hoogendoorn et al., 2010) within both the national systems of innovation (NIS) and comparative social enterprise (CSE) frameworks. While NIS is primarily used to explain variation in technological innovation, CSE explains the variation in social enterprise across the globe. Both frameworks justify the use of national level institutional factors to examine the existing patterns in the characteristics of social enterprise and social enterprise innovation.

CHAPTER 3

METHODS, DATA AND MEASURES

3.1 Overview

Answering the research questions and hypotheses above, requires organizational as well as country specific information. In the sections that follow I describe how the data should be structured so as to allow for determining the probability of an organization being a social enterprise and the likelihood of the social enterprises being innovative within a country based on organizational and country characteristics. To begin, a novel dataset was compiled from multiple secondary data sources including a global entrepreneurship dataset and several additional data sources outlined in Kerlin (2009, 2013) (e.g., Global Competitiveness Index, Models of Civil Society etc…). A description of the datasets utilized to construct the dataset are described below.

This chapter is composed of multiple parts. I begin by introducing the GEM survey with regard to sampling design, survey instrumentation and key variables used in this study. I follow with a description of the other secondary datasets containing measures for each of the level-2 predictors utilized in this study, broken down by institutions and opportunities. I then discuss other key measures including the dependent variables and level-1 predictors with detailed descriptions of how they are operationalized. I conclude with a discussion of the analytical approach taken to examine each of the research questions along with strategies to reduce bias and loss of power. A description of each dataset, beginning with GEM is provided below.

3.2 The Global Entrepreneurship Monitor (GEM)

The global entrepreneurship data come from the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS). The GEM is the "largest ongoing study of entrepreneurial dynamics in the world" (Bosma, Coduras, Litovsky, & Seaman, 2012, p.

2) and is a general adult population survey designed to capture national entrepreneurship rates and individual-level characteristics of nascent and existing entrepreneurs. Beginning in 2000, GEM has partnered with national teams to collect annual cross-sectional data on the entrepreneurial activity of individuals aged 18 to 64. For every country, national teams identified at least 2,000 respondents[11] (representative of the general population) who were administered the 2009 GEM survey. The interview procedure varied by country. Some countries used a single interview procedure exclusively, others employed a combination of land line, mobile phone and/or face-to-face interview techniques. The sampling method also varied by country. In Algeria for example the random walk method was used, random digit dialing for mobile and land-lines was used in Belgium, and in Brazil respondents were identified from random census tracks in every city. Again, because GEM is a general adult population survey, the dataset is based on self-reports of nascent entrepreneurs (e.g., 'I am going to start a business'), existing business owners (e.g., 'I currently own a business') and *non*-entrepreneurs (e.g., 'I neither own nor plan to start a business'). This allows GEM researchers to estimate the entrepreneurship rates of the participating GEM countries.

In 2009, the GEM APS survey was expanded to include questions on social enterprises. I use the 2009 GEM survey data to capture information on social enterprise and social enterprise innovation across countries. National teams administered the 2009 questionnaire in their respective countries between June and August of calendar year 2009. Although wealthy (primarily European) countries are overrepresented in the dataset (see Appendix B for a full list of countries), in all a total of 54 countries covering

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[11] Some countries had well over 2000 respondents: Belgium (n=3989); Chile (n=5000); Colombia (n=3608); Germany (n=6032); Iran (n=3,350); Italy (n=3000); Netherlands (n=3003); Slovenia (n=3030); South Africa (n=3135); Spain (n=28888); UK (n=30003); US (n=5002). Countries with fewer than 2000 respondents include Japan (n=1600), Morocco (n=1,500), Russia (n=1695), Tonga (n=1184) and Venezuela (n=1693).

7 world regions[12] and 181074 individual respondents participated in this expanded survey[13]. The survey itself contained over 200 variables, 16 of which are utilized in this study. All of the organizational variables in including the dependent variables: social enterprise and innovation as well as the predictors: entrepreneurial motivation (opportunity vs. necessity-based), sales revenue, area of impact, percentage volunteers; and controls: organization size and age, came from the 2009 GEM APS.

The 2009 GEM APS is consists of self-reports of over 180,000 nascent and existing entrepreneurs. Due to respondent anonymity however, responses are unverifiable. This means that there are some inherent limitations with regard to validity testing of GEM data. For example, if an individual claims to be the owner of a social enterprise organization, I am unable to objectively verify if the organization actually exists (i.e., via official company registrations), or in the case of social enterprise innovation, if the organization actually produced a new product, process or marketing innovation (i.e., patent registrations or customer surveys etc…).

To mitigate some of these challenges, I restrict my analyses to cases to owner/manager/founders of existing organizations as opposed to nascent entrepreneurs. These respondents are by definition more likely to report on existing (or already occurred) entrepreneurship and innovation activity. Although restricting the data in this way reduces the overall number of cases at the organizational level (by 238 nascent SEs), it simultaneously improves the overall trustworthiness and reliability of the data being analyzed.

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[12] The United Nations Educational, Scientific and Cultural Organization (UNESCO) identifies 7 world regions. The region with the least representation in this dataset is Oceania consisting of: Australia, Cook Islands, Fiji, Kiribati, Micronesia, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga and Tuvalu. Only Tonga is included in the analyses.

[13] Excluded from these numbers is Shenzhen, China which is a region not a country and therefore removed entirely from subsequent analyses.

3.3 Other Global Datasets

The national-level predictor variables in this study come from the global indicators outlined in Kerlin (2009, 2013). The number of countries with available data varies between each indicator, making cross-country comparisons a challenge, although missing values were avoided as much as possible by using the closest available yearly data. The majority of the variables in this study derive from the World Bank's World Development Index (WDI) (Lee, 2012). The WDI is the source of the World Bank's annual compilation of data about development. Data are derived primarily from official registers, national accounts or they are based on household, health or labor force surveys. I draw on multiple indicators within the WDI as proxies for several of the constructs outlined in the literature review including the availability of potential social, and commercial business opportunities, the size of the welfare state, and innovation capacity. Additional sources include the World Economic Forum, among others. Next, I provide detailed descriptions of the data sources, indices and indicators utilized in this study.

3.3.1 Datasets on Institutions

The following institutional variables were constructed to model the relationship between Kerlin's (2009, 2013) macro-institutional factors[14] and social enterprise and social enterprise innovation. These relationships are explored in research questions 1, 2 and 4.

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[14] The civil society classifications are derived entirely from the work of Salamon and Sokolowski (2009). A full description of the sources of data and how groups were determined is discussed in their paper. A detailed description of the dataset was not included in this section due to the inability to utilize the data in subsequent analyses. However, classifications are defined the sections preceding this one as well as in Operationalizations (Appendix C).

Welfare State

Two variables are combined to create the welfare state construct identified in Kerlin (2009, 2013): expenditure on public health and public education. Public education expenditure captures the percent of GNI that is spent of public education operating expenditures including wages and salaries at all levels of government. It also includes subsidies provided to households or private entities for education related spending. This data come from the UNESCO Institute or Statistics and are gathered from ministries of education or related entities within each country. Public health expenditure is calculated as recurrent and capital spending including donations from international agencies or NGOs. Data on health expenditure come from the World Health Organizations (WHO's) Global Health Expenditure Database supplemented with country data.

Worldwide Governance Indicators (WGI):

The WGI covers over 200 countries measuring six dimensions if governance including: Voice and Accountability, Political Stability and Absence of Violence and Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption. Each dimension of governance is the aggregate composite of several hundred underlying values taken from 31 different data sources.[15] These underlying source data reflect the views of individual survey respondents as well as experts from public, private and NGO organizations (Kaufmann, Kraay, & Mastruzzi, 2010) who are all familiar with the governance situation in the country. According to the WGI governance is defined as "the traditions and institutions by which authority in a country is exercised. This includes (1) the process by which governments are selected, monitored and replaced; (b) the

[15] Source data incudes the World Economic Forum's Global Competitiveness Index (GCI) find a complete list at: www.govindicators.org.

capacity of the government to effectively formulate and implement sound policies; and (c) the respect of citizens and the state for the institutions that govern economic and social interactions among them" (Kaufmann, Kraay, & Mastruzzi, 2010, p. 4). Consistent with Kerlin (2013) this study focuses on parts (b) and (c) of this definition, specifically government effectiveness, regulatory quality, rule of law and control of corruption. I discuss each dimension in turn.

- Government Effectiveness captures the perceived quality of public services including civil service, the quality of policy development and implementation, the feeling of independence from political pressures and the credibility of commitment to such policies by the government.
- Regulatory Quality captures the perception of the government's ability to develop and implement policies and regulations that encourage the development of the private sector.
- Control of Corruption reflects perceptions of the degree to which power on behalf of public officials is exercised for private benefit.
- Rule of Law reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

Economy

Global Competitiveness Index (GCI): The World Economic Forum's Global Competitiveness Index (GCI) ranks countries according to a weighted system of pillars and indicators. They define competitiveness as "the set of institutions, policies, and factors that determine the level of productivity of a country" (Schwab, 2011, pg. 4). The GCI identifies twelve pillars which drive productivity: institutions, infrastructure, macroeconomic stability, health and primary education, higher education and training,

goods market efficiency, labor market efficiency, financial market sophistication, technological readiness, market size, business sophistication and innovation. These pillars are used to develop scores which are in turn used to determine three broad stages of national economic growth: factor (stage 1), efficiency (stage 2) and innovation-driven (stage 3) economies (Schwab, 2011).

Culture

Global Leadership and Organizational Behavior Effectiveness Research Program (GLOBE) Values Survey: The GLOBE Survey developed by House et al., (2004) established nine dimensions of culture used to compare similarities and differences in norms, values, beliefs and practices among various societies. The authors defined culture as "shared motives, values, beliefs, identifies, and interpretations of meanings of significant events that result from common experiences of members of collectives that are transmitted across generations" (pg. 15). GLOBE Questionnaires were administered to middle managers in three industries: food processing, financial services and telecommunications. In all, over 17,000 middle managers from 951 organizations in 62 countries participated in the study. Researchers gained access to multiple organizations within any two of the three industries in each country, and then distributed questionnaires to as many middle managers as possible. In the case of multi-cultural countries (i.e., countries identified as having multiple sub-cultures) GLOBE researchers sampled the subculture with the greatest amount of commercial activity. However, in certain instances they also sampled more than one subculture (e.g., White and Black South Africa).[16]

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[16] When subcultures were measured for a particular country (i.e., East & West Germany, French Switzerland and Switzerland, Black and White South Africans) the value for the most populous group was used.

The GLOBE nine core dimensions of culture are as follows: power distance, uncertainty avoidance, humane orientation, institutional collectivism, in-group collectivism, assertiveness, gender egalitarianism, future orientation and performance orientation. There were two forms of question for each dimension. The first form measured the actual practices of managers within their organization and what managers thought should be the values in their organization (the 'As Is' response format). The second form measured managerial reports of practices and values in their societies (the 'Should Be' response format). In the first instance, scales incorporated the idea of "What Is" or "What Are" to measure actual organization practices; in the second, the idea of "What should be" measured respondents' values concerning those practices[17]. Kerlin restricted the dimensions of culture to the two (uncertainty avoidance and in-group collectivism) which appeared to be the most directly related to entrepreneurship (Kerlin, 2013). Additionally, these dimensions correlate with Hofstede's (1980) work, thereby strengthening their reliability. This study uses the dimensions of culture identified in Kerlin (2013) including 'should be' uncertainty avoidance values scores and 'as-is' in-group collectivism practices scores to assess the influence of culture on social enterprise and social innovation. Descriptions of the dimensions are provided below.

- Uncertainty avoidance is defined as the extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events.
- In-group collectivism measures the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families.

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[17] In GLOBE, the countries were then grouped based on similar cultural attributes (along all 9 dimensions) into ten country clusters: African, Anglo, Confucian, Eastern European, Germanic, Latin American, Latin Europe, Middle Eastern, Nordic and Southeast Asia.

International Aid

Net ODA: Net official development assistance (ODA) per capita captures the flow of official and private financial contributions from the members of the Organization for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) to developing economies divided by mid-year population. DAC members report this information directly to the DAC secretariat. Official assistance includes aid from state, local and executive agencies aimed at promoting economic development and welfare. Figures include resource flows through cash and commodities, including those aimed at augmenting the stock of human capital. Additionally, all ODA must include at least 25% grant assistance at a 10% discount rate. ODA repayments are calculated as negative flows. Values do not reflect aid given by recipients to other developing nations. ODA excludes aid for military assistance.

Innovation Capacity

Innovation capacity is reflects a country's ability to commercialize the new and improved products and services needed for it to become and/or remain a productive member of the global economy (Furman, Porter, & Stern, 2002). The number of technological firms, firm size (i.e., number of employees or share of the market) and firm-level innovation (i.e., the invention and commercialization of new and improved, often technological, products and services) are typically used as indicators of a country's innovation capacity. In order to measure innovation capacity at a national-level, previous studies emphasized expenditure on research and development and the size of the science, technology and engineering workforce (Furman et al., 2002). Patents on the other hand are often used as an indicator of actual as opposed to potential national productivity. I use a combination of potential (R&D expenditure) and actual innovation outcomes

(STEM workforce and patents) to measure innovation capacity in this study, and discuss the pro's and con's of each.

R&D Expenditure: Research and development expenditure measures capital expenditures and current costs (i.e., wages and costs of researchers, technicians and supporting staff, materials, supplies or other equipment, subscriptions to libraries, laboratories etc…) on work undertaken to increase the "stock of knowledge, including knowledge on humanity, culture, and society, and the use of knowledge to devise new applications" (Lee, 2012, p. 335). R&D covers basic research, applied research, and experimental development. Previous studies have linked national R&D expenditure to R&D outcomes (i.e., what funded projects contribute in the realm of new knowledge) in terms of patents and publication outputs. Recognized limitations of national R&D expenditure include the inability to differentiate between private, academic and public sector R&D activity, each of which vary with regard to their contribution to national competitiveness. Nor is it necessarily a clear path between dollars spent and actual commercialized technologies. Links between results are correlated and causal relationships are implied with caution. However, while national R&D expenditure is an understandably gross measure of innovation capacity, it is useful in large part to its comparability in cross-country studies like this one.

R&D Researchers (i.e., STEM Workforce): An educated workforce (i.e., human capital) is critical to innovation because, as the founders of NIS established, learning by 'doing' or 'interacting,' is a driving force behind long-term economic development (Fagerberg & Sapprasert, 2011). According to Furman et al., (2002) "R&D manpower and spending" played an extremely important role in determining the differences in R&D

productivity. Furthermore, countries weak in human capital often lack the skilled personnel to participate in the production of the competitive needs of the country. This indicator (i.e., researchers per thousand labor force in full time equivalent (FTE) hours) gathers data on researchers engaged in the process of creating new knowledge, products, processes or methods, including the systems of management of these systems and includes post-doctoral researchers.

Patents: Unlike, R&D expenditure and the R&D workforce which have been used to measure innovation capabilities, patent counts have widely been used as a proxy for innovation productivity. A patent is defined as an exclusive right to a new way of doing something or a new technical solution to a problem for a specified period of time (typically 20 years). The requirements are that the invention be of practical use and display characteristics that as of yet unknown in the existing body of knowledge. In this study, resident filings reflect patent applications from residents of the country in question, and nonresident filings are from those applicants abroad. The time and expense spent on filing patent applications, means that they are often viewed as a useful indicator of commercializable inventions. In this study, the overall count of patent applications filed by residents and non-residents at a national or regional patent office are combined to create a single patent measure[18].

3.3.2 Datasets on Opportunities

[18] International patents applications still only count as national.

As I discussed in Chapter 2, social enterprises are expected to seek out and exploit social and/or environmental opportunities alongside commercial ones to achieve their goals. Thus, opportunities are important drivers of entrepreneurial activity. The following variables are used to explore the relationships between social enterprise, social enterprise innovation and national social, environmental and commercial opportunities (see Figure 1.1 above). These relationships are then examined in research questions 1, 2 and 4. I utilize four proxy measures to investigate these relationships. National human development rank serves as a proxy for social opportunities, environmental performance serves as a proxy for the environmental needs of a country, and market size serves as a proxy for commercial opportunities. I also include an income inequality measure as an alternative to social, environmental and market opportunities, because of its significant influence in economic development and S&T policy.

Social Opportunities

The Human Development Index (HDI) is designed to measure quality of life. The HDI is a composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. HDI scores express the average quality of life of an individual within the country as a value from 0 to 1 with 1 representing the highest level of human development attainable. The three measures of human development include: life expectancy at birth; mean years of schooling (adults) and expected years of schooling (children); and GNI per capita (PPP USD). The HDI improves on older, unidimensional measures of 'poverty' in which a country's poverty level could be determined via per capita income alone. In this respect, the HDI is multidimensional to the extent that it takes into account conditions beyond income (including education and health) to portray the relative conditions of those

seeking to regain or maintain "power over their lives and opportunities to live the way they had reasons to value" (Anand & Sen, 2000) . However, as with any complex construct, HDI scores do not reflect the intangibles associated with individual measures of quality of life that remain elusive to quantitative or economic reasoning.

Environmental Opportunities

I use EPI scores as a proxy for the environmental opportunities in a country. The environmental performance index (EPI) is a composite index which ranks countries on performance indicators that cross policy categories of environmental public health and ecosystem vitality (de Sherbinin, Reuben, Levy, & Johnson, 2013). The strength of this measure lies in the fact that it is inherently 'fair,' measuring the relative distance countries are away from established policy goals. The EPI is composed of 22 indicators in all which measure the following policy categories or constructs: the environmental burden of disease; air pollution (effect on humans) and (effects on ecosystem); water (effects on humans) and (effects on ecosystem); biodiversity and habitat; agriculture; forestry; fisheries and climate change.

Commercial Opportunities

Social enterprises are hybrid entities they may seek out opportunities to compete in commercial markets as well. In this study the market strength of a country is measured in terms of gross national income (GNI) per capita: GNI per capita (formerly GNP per capita) is the gross national income, converted to U.S. dollars using the World Bank Atlas method, divided by the midyear population. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. GNI, calculated in national currency, is usually converted to U.S. dollars at official exchange rates for comparisons across economies, although an

alternative rate is used when the official exchange rate is judged to diverge by an exceptionally large margin from the rate actually applied in international transactions. To smooth fluctuations in prices and exchange rates, a special Atlas method of conversion is used by the World Bank. This method applies a conversion factor that averages the exchange rate for a given year and the two preceding years, adjusted for differences in rates of inflation between the country and Europe, Japan, the United Kingdom, and the United States.

Income Inequality

Income inequality has been linked to the economic and social wellbeing of a nation (Anand & Segal, 2008; Cozzens & Kaplinsky, 2009; Sen, 1999), and to national innovation policy in particular (Cozzens, Bobb, & Bortagaray, 2002). It is also worth recognizing that income inequality is merely one form inequality, and it does not in fact capture the multidimensional nature of the concept with which economic development and science and technology policy makers must contend (Cozzens, 2007). In this study, income inequality is measured by the Gini Index (GINI). The GINI measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from perfect equality. Data come from nationally representative household surveys. Data are adjusted for household size however no adjustments have been made for variations in cost of living or consumption habits. Comparability between countries is limited to some extent due to the fact that some surveys use income while others use consumption expenditure as the living standard. There is also variation within households based on age, or consumption needs that might bias the distribution. A GINI score of 0 represents perfect equality and an index of 100 perfect inequality.

3.4 Key Measures

In this section I introduce key variables used in the analysis to examine the relationship between institutions and opportunities on social enterprise and social enterprise innovation. I begin by describing the dependent variables: social enterprise and innovation. I then introduce the independent variables at the organizational-level (i.e., entrepreneurial motivation, area of impact, and percent sales) as well as any controls.

3.4.1 Dependent Variable 1: Social Enterprise

The definition of social enterprise used here encompasses organizations in the 'non-profit with income generating activities' and 'social enterprise' categories of the hybrid spectrum delineated in Alter (2007). Five GEM variables were used to determine the social enterprise status of an organization: *sestart, seowndif, seonincm, seonsale* and *ownmge*.[19] Using the strict definition of social enterprise (discussed in an earlier section), an organization was defined as a social enterprise if the respondent was the current founder and/or owner-manager of an existing organization with an explicit social purpose (i.e., sestart = 2 or 3) (see Appendix C for detailed operationalizations) and that also generated revenue from sales (i.e., *seonincm* = 1 and/or *seonsale* > 0). I also classified two other forms of organization using the GEM variables. The first are existing social organizations (equivalent to traditional nonprofits in Atler's spectrum, see Figuire 1) that are organizations with a social purpose, but who *do not* generate revenue from sales. The second are conventional business organizations defined using the variable: *ownmge*. These respondents indicated that they were either self-employed or the current owners of a business that they helped manage in which they sold goods and services to others but which did not have an explicit social purpose (*ownmge* =1). I then constructed a

[19] A description of each variable including the survey question and values are provided in the Appendix.

categorical variable (*OrgType*) to capture these three organization types: conventional business (*OrgType* = 0), social organization (*OrgType* = 1) and social enterprise (*OrgType* = 2). See Appendix C for a complete list of variable names, definitions and operationalizations.

There were a number of special circumstances that needed addressing before continuing to prepare the dataset for final analysis. In several instances, respondents either did not indicate if their social organization generated earned income, or the information provided was conflicting (i.e. *seonincm* =1, but *seonsale* =0). If there was no way to confidently determine whether or not the respondent was owning or managing a social organization (i.e., no earned income activity) or a social enterprise, the organization was dropped from the sample (n = 296) in order to simplify subsequent analyses. Likewise, in the case of serial entrepreneurs, that is, if respondents indicated that they were currently owning-managing multiple businesses, they were asked to speak to the organization for which they were the most familiar. However, in a small number of cases, managers of existing social businesses (social organization or social enterprise) were also managers of existing conventional businesses. This particular form of serial entrepreneur could be determined if there was a positive response to owning-managing a traditional business at the outset of the survey (Q1C: *ownmge*) and to owning-managing an existing business with particularly social, environmental or community objectives later on in the survey (Q6A1: *sestart*). If the business referred to as a social business was the same one identified at the outset (i.e., *seowndif* = 1) then that organization was classified as a social organization or social enterprise. However, in instances where the two organizations were different (i.e., *seowndif* = 2, or was unknown) subsequent responses (i.e. those pertaining to the innovative activity or area of impact) could have pertained to the social or the conventional business and were therefore excluded from analyses.

3.4.2 Dependent Variable 2: Innovation

The definition of innovation used in this study is taken from the Oslo Manual: "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (Tanaka, et. al., 2005). There are three Oslo types of innovation captured in GEM: product, process and marketing. Five GEM variables were used to capture innovation: *seontype*, *seonprod*, *seondelv*, *seonprmo*, *seonniche*. These variables correspond to the three types mentioned above: *seontype* captured product or service innovations, while *seonprod* and *seondelv* captured modes of production or delivery innovations, corresponding with the Oslo Manual's definition of process innovation. Lastly, *seonprmo* and *seonniche* reflected the Oslo manual's definition of marketing innovation which involved new promotional methods or market niche. The Oslo Manual definitions of each type of innovation are provided below (Tanaka et al., 2005):

Product innovation: A product innovation is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.

Process innovation: A process innovation is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

Marketing innovation: A marketing innovation is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing with the objective of increasing sales. New marketing methods in product promotion involve the use of development and

introduction of a fundamentally new brand symbol (as distinguished from a regular update of the brand's appearance) which is intended to position the firm's product on a new market or give the product a new image.

Measuring innovation

A dichotomous (success, failure) variable was constructed to capture overall innovative vs. non-innovative social enterprises. If the respondent replied 'yes' to any one of the three innovation types, (i.e., regardless of whether the innovation was product, process or marketing) they count as innovative, if on the other hand none of the innovation types was selected the social enterprise was non-innovative. Because social enterprises could report multiple types of innovation, an additional four factor categorical variable was also developed capturing none, one, two or three Oslo innovations.

Table 3.1: Organization and Innovation Type

Organization Type		**Frequency**
Social Enterprise		*1,146*
Social Organization		1,510
Conventional Business		22,103
Innovation		
Social Enterprise Innovation		*794*
Product Innovations	Product or Service	404
Process Innovations	Production	411
	Delivery	406
Marketing Innovations	Promotion	392
	Market Niche	519

3.5 Additional Variables:

The organizational-level predictor of social enterprise is entrepreneurial motivation (i.e., necessity-based vs. opportunity-based entrepreneurship or both). Control

variables at the organizational level include: size (i.e., calculated as the overall count of the number of volunteers, full-time and part-time employees) and age (i.e., calculated as 2009 less the first year the organization provided services to others). On the other hand, commercial sales activity (i.e., sales revenue) and areas of impact (i.e., arts and culture, health, education, environment, social services, community development etc…) are characteristics of social enterprises that are suspected to respond to national-level factors given the right conditions. Social enterprise areas of impact (or sectors of operation) were determined by coding open-ended responses to an open ended question. The coding best practices outlined in Creswell and Plano Clark (2007) and Miles and Huberman (1994) were followed where possible (see description below). Each of these variables along with the independent variables constructed from the secondary global datasets mentioned earlier are described in the operationalizations Appendix C.

Qualitative Data

Overview: The GEM APS was composed predominantly of closed-ended interview questions. Data collected from these responses allowed for answering research questions pertaining to the size of social enterprise and social enterprise innovation. However, as Kerlin points out, the shape of social enterprise is also determined by institutional factors. In this study the shape of social enterprise is determined by two elements: sales revenue and diversity of areas of impact. While the former of these two was captured through a response to a simple closed-ended question, the latter was not. The GEM interview protocol allowed owner / manager / founders to specify the kinds of products or services they provide in the form of an open ended response (GEM APS Q6B8). This question allowed respondents to specify their enterprises' primary area of focus. Responses were transcribed and later translated into English for comparative

analysis. In all over 2700 owner / manager / founders of social enterprises or social organizations responded to this question. All were coded using the classifications identified in the International Classification of Non-Profit Organizations (ICNPO) (Salamon, Anheier, List, Toepler, & Sokolowski, 2003). The INCPO consists of 12 high level categories and nearly 30 sub-codes (see Appendix D for a detailed summary of the classification scheme). Distinct sub-codes allowed for responses to be coded and incorporated into the larger dataset for quantitative analysis.

Validity and Reliability: Open ended responses collected by GEM interviewers were typed and entered into the GEM database in their original language and later translated into English where necessary. In order to reduce threats to construct validity I restricted the sample to existing social enterprise owner / manager / founders. I then proceeded to improve the reliability of open-ended responses by checking the assignment of categories to open ended responses at least once after the initial coding was complete. This process helped ensure that the coding scheme was accurately interpreted.

Coding: I labelled text strings (sentences and/or phrases) according to the exact words of the respondents. I then assigned labels to one or more of the 12 international Classification of Non-Profit Organization (ICNPO) code groups wherever possible. In instances where the appropriate code could not be determined (most likely due to lack of sufficient information), responses were coded as "Don't Know" and excluded from the analysis. Each entry had to be analyzed carefully because of misspellings generated by the GEM interviewers and/or English translators. In an effort to ensure the reliability of coding, after the initial coding was complete, codes were checked for accuracy. Values representing the 12 areas of impact were then added to the larger dataset for analysis.

The diversity of areas of impact were measured as the total number of impact areas in which social enterprises were active for a given country.

3.6 Analytical Approach

Logistic Hierarchical Generalized Linear Modeling (Logit HGLM):

Hierarchical linear modeling (HLM) or multilevel modeling (MLM) is a statistical technique that is used to discern patterns and relationships that link values at one level of analysis (in this case, organizations) to factors at a higher unit of analysis (in this case, countries). It is a commonly used technique in public health and education policy because it allows researchers to identify contextual factors (e.g., neighborhoods; classrooms) that significantly influence individual member behaviors (e.g., children's cognitive development; student achievement). Data are considered nested, in that data at a lower level of analysis (i.e., social enterprise) are clustered in groups at a higher level of analysis (i.e., countries). In this study, the dependent variables, social enterprise and social enterprise innovation, are dichotomous and as a result, require the use of logistic hierarchical generalized linear model (Logit HGLM). Logit HGLM, like logistic regression analyses allow for non-normally distributed predicted values (O'Connell & McCoach, 2008; Raudenbush & Bryk, 2002; Snijders & Bosker, 2012). Logistic analyses of dichotomous outcomes model the odds of success and the effects of the explanatory variables on these odds.

The extent to which organizations in a country are similar to one another is measured through the intraclass correlation coefficient (ICC). The ICC is the explained variance in the dependent variable divided into between-group and within-group components. The ICC value represents the proportion of the variables that is explained by between group components. If data are completely dissimilar or independent from each other within a group then the ICC score will be 0 (i.e., social enterprises in a

particular country do not share similar characteristics). If, on the other hand social enterprises within a group are similar, the ICC will have a positive value.

If clustering is ignored, it means that the distinctions between within and between-group variance are not accounted for. As a result the estimated variance from the sample tends to be smaller than would be expected if the clustered nature of the data had been preserved. Ignoring the clustered nature of the data increases the likelihood of Type I errors compromising the validity of results and inferences drawn to the population because variance estimates (and thus standard errors) are too low (Alemdar, 2008; O'Connell & McCoach, 2008). For this study, I constructed a typical two-level mixed model assigning organizations to level-1 and countries to level-2. In HLM different analytical techniques are used depending on the particular research question being asked. I review the ones relevant for this study below:

Empty or null model:

Research questions 1 and 2 require first running an empty model (i.e., a model with no explanatory variables). This model partitions the variability in the data between the two levels (organizations and countries). This model indicates if there is clustering of the data. That is, the empty model asks is there is sufficient variability in the intercepts present across groups (i.e., countries). Specifically for this study, I want to know two things: 1) if significant variance exists in the average likelihood (or probability) of an organization being a social enterprise (as opposed to a conventional business or traditional non-profit organization) across countries and 2) if significant variance exists in the average probability of an organization being an innovative social enterprise (as opposed to a non-innovative social enterprise). In a nutshell, the empty model helps to identify similarities between different social enterprises (or innovative SEs) that belong to the same country. In most instances, within group differences are larger than between-group differences (i.e., social enterprises within the same country are more different from

each other than they are from other groups of social enterprises in other countries); however, when significant between group variability exists, then grouping by country is worthwhile and multi-level modeling is an appropriate analytical approach. Otherwise, when clustering by country (i.e., between group variability) does not matter, multi-level modeling is unnecessary.

Empty model for continuous outcomes[20]: $Y_{ij} = \gamma_{00} + U_{0j} + R_{ij}$

Empty model for dichotomous outcomes[21]: logit $(P_j) = \gamma_0 + U_{0j}$

The ICC is calculated using the estimates[22] from the empty model:

ICC for continuous outcomes: $\rho_I = \tau_0^2 \ / (\tau_0^2 + \sigma^2)$

ICC for dichotomous outcomes[23]: $\rho_I = \tau_0^2 / (\tau_0^2 + \pi^2 / 3)$

Random intercepts:

The random coefficient model is used when investigating the effects of level-2 variables (i.e., institutions and opportunities) and is especially useful for small group sizes at level-2 (i.e., under 100 countries) (Snijders & Bosker, 2012). Research questions, 1 and 2 require modeling between group differences via a random intercept model (i.e., intercepts vary while slopes across countries remain fixed).[24] In this study, the random intercepts model builds on the empty model by adding in level-2 predictors. The between country variation indicates the extent to which social enterprise or social

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[20] This is also known as a one-way random effects ANOVA. Y_{ij} represents the value of the dependent variable (e.g., size or innovation) for organization *i* within country *j*; γ_{00} is the grand mean for size; U_{0j} is the random effect at the country-level and R_{ij} is the random effect or error terms at the organizational-level.

[21] This empty model specifies the probability distribution for country-dependent probabilities (i.e., γ_{00} is the population average for the transformed probabilities: logit (P_j)) and U_{0j} is the random deviation from the average for group *j*.

[22] Var $(U_{0j}) = \tau_0^2$ and Var$(R_{ij}) = \sigma^2$

[23] In logistic HGLM, the intra-class correlation is calculated as the variance between countries divided by the variance between countries plus 3.29 or $\pi^2 \div 3$ (Snijders & Bosker, 2012).

[24] This technique models level-2 relationships while taking into account the effect of unequal group sizes (i.e., different numbers of organizations within each country).

enterprise innovation (i.e., the intercept) has a greater probability of occurring in some countries and not others due to national-level factors.[25]

A micro-level model:

For research question 3, (i.e., the 'micro-level' question) ordinal logistic regression is appropriate. When the probability of innovation is greater than the probability of failure to innovate, the odds are greater than 1.0 and if the probability of innovation is less than the probability of failure, the odds are less than 1.0; otherwise if the outcomes are equally likely the odds are equal to 1.0.

Cross-level interactions:

Adding in level-2 predictors to explain variation in intercepts (i.e., the random intercepts model) is sufficient to answer research questions 1 and 2. However, research question 4, investigates whether country-level factors moderate (i.e., enhance or diminish) a relationship observed at level-1. That is, question 4 determines if level-2 variables can explain variation in level-1 slopes. To do this, I add each national-level factor in succession (one variable at a time) as a random effect to examine whether the level-1 slope for that factor varies across countries (random slopes). Factors for which the relationship significantly varies across countries are then kept in the model and the effect of their interaction is examined.

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[25] An important consideration in nested models is centering. Centering has to do with defining the intercept of the level-1 and leve-2 predictors so that they are meaningful. Questions will require using a different centering technique to properly interpret results. There are three centering options: CWC1 (used to assess within country relationships), CWC2 (used to asses between country relationships), CGM (centers such that intercepts are adjusted means: e.g., the intercept is the probability of innovation that would result if all countries had the same mean uncertainty avoidance score).

To examine cross-level interactions in this study, I allow for the relationship (i.e., slope) between organizational level predictors (i.e., sales revenue) and the dependent variable, social enterprise innovation, to vary by country (thereby making slopes different from each other and not parallel). This model will indicate if national level-factors (i.e., institutions or opportunities) affect social enterprise innovation differently in different country contexts.

Centering

Centering is an important part of any HLM study. According to Enders and Tofighi (2007) group mean centering (Group) (i.e., normalizing scores within the country by subtracting the average) is appropriate if the association between level-1 predictors and the dependent variable is of interest. Grand mean centering (GMC) (i.e., averaging institution or opportunity scores across countries) is appropriate when you're interested in the level 2 relationships while controlling for level 1 covariates. Group mean centering is also preferable for examining cross-level interactions or interactions between level-1 variables while grand mean centering is appropriate for interactions between level-2 variables. Grand vs. group mean centering also has to do with the interpretation of results. Grand mean centering is appropriate when you are looking at overall relationships across countries and group mean centering is relevant when you are interested in relationships relative to the group (i.e., country). Because I am primarily interested in overall relationships across countries and level-2 relationships for research questions 1 and 2, I use grand mean centering of level-2 predictors. With respect to research question 4, I use group mean centering for any level-1 predictors and grand mean centering for level-2 predictors. Group mean centering was also used for research question 3 as the relationship between level-1 predictors is of interest. In the next section

I first discuss the challenges and limitations of the dataset and how these problems were mitigated using best practices before describing the data itself.

3.7 Data Limitations and Mitigation Strategies

As with other global comparative studies, reported analyses are cross-sectional and correlational in nature, falling short of causal determinations (House, et al., 2004). Likewise, while multilevel modeling techniques can provide a better understanding of non-independent or clustered datasets, the method alone cannot lead directly to causal links (Antonakis et al., 2010). Multiple data sources are combined in this study, where data are collected using different methodological practices and in different time frames (see Appendix C). As stated above, there are also limitations with respect to the validity of responses in GEM data as GEM is comprised of self-reports by nascent and existing owner / manager / founders of businesses. To mitigate the potential threat to construct validity, I restrict the cases to existing owner/manager/founders.

Missing Data

Missing data can be a problem in statistical analyses depending on the extent of the missing data and if the data is missing systematically or at random. For the purposes of this study it was important to determine the amount and patterns of missing data before beginning analyses. Describing patterns found in missing data is useful because it helps address concerns caused by incomplete data. Incomplete data can result in biased estimates and thus misinterpretation of results when patterns of cases with missing values are systematically different from complete cases. Ignoring patterns in missing data by deleting incomplete cases (i.e., listwise deletion) is also wasteful in that deleted cases often still contain valuable information (Snijders & Bosker, 2012).

Missing data mechanisms describe the relationship between missingness and the variable values. There are three missing data mechanisms defined by Little and Rubin

(2002) and Allison (2009): missing completely at random (MCAR); missing at random (MAR) and not missing at random (NMAR). The assumption that the pattern of missing values does not depend on the data values themselves is known as missing completely at random (MCAR). In this last case, missingness occurs purely by chance. Generally speaking, while it is impossible to determine with certainty whether or not data are MAR or NMAR, given these three mechanisms, the most commonly used method for handling incomplete data is based on the MAR assumption (Raudenbush & Bryk, 2002; Snijders & Bosker, 2012). This is the most reasonable approach when the researcher is interested in including as many predictors as possible. I examined patterns in the data in order to determine if values are missing at random (MAR) or missing completely at random (MCAR) using Little MCAR test in SPSS 21.[26] Results of this test will inform the best approach for handling missing data discussed in the section below.

Approaches for Handling Missing Data:

There are several approaches to handling missing data including listwise deletion, mean substitution and multiple imputation among others. However, several scholars have argued against listwise deletion or means substitution to get around this problem[27] (O'Connell & McCoach, 2008; Raudenbush & Bryk, 2002; Wayman, 2003). Simple listwise deletion (i.e., eliminating any case with at least one value missing) is the default procedure in most multilevel modeling software packages including SPSS. However, listwise deletion is problematic particularly in studies where the sample size is small (i.e., less than 100 cases at level-2) and there are high rates of missing data, as in the case of this study (see Table 5. in Correlations). Likewise, deleting large amounts of data will

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[26] Little's MCAR test checks to see if the data are MCAR. The null hypothesis states that the data are MCAR (missing completely at random), therefore if the test statistic is significant then the data are considered either Missing At Random (MAR), or Missing Not At Random (MNAR).
[27] These techniques may lead to misleading conclusions or artificially reduce the variance.

result in the loss of statistical power, data variability and generalizability when cases are MAR and MNAR. As a result, listwise deletion is only valid when the data are missing completely at random (MCAR) because the reduced sample size is a random subset of the original sample (Alemdar, 2008). As an alternative to listwise deletion techniques, imputation involves filling-in missing data with true values. The newly completed dataset can then be analyzed using standard analysis procedures (Little & Rubin, 2002). Multiple imputation involves the sequential estimation of missing values, and is particularly important when dealing with multilevel data procedures where large sample sizes are required because variances at each level are analyzed simultaneously (Alemdar, 2012). This study uses listwise deletion and multiple imputation techniques as needed, based on results of Little MCAR test. Next, I present the results of the missing values analysis and Little's MCAR test as well as the approaches used to handle missingness at level-2. I then proceed with presenting the analyses and results of the research questions and hypotheses in Chapter 4.

Missing Values Analysis

Level-2 Missingness

In a multilevel model, missing data at level-2 (i.e., countries) is not allowed. In order to successfully run a multilevel model the number of cases with complete data should meet or exceed 30. Moreover, fewer instances at level-1 (i.e., organizations) are acceptable as long as there are a sufficient number (n >= 30) of level-2 cases (i.e., countries) (Snijders & Bosker, 2012). In this study, although each country-level variable had values for at least 40 countries, because each global dataset had different country samples, the number of complete cases was dramatically reduced (i.e., n < 30) with the addition of each new variable. Therefore, most of the institutional variables were missing values for at least one country (see Table 3.2). Missing values were particularly

problematic in three of the seven national-level institutional variables, models of civil society, culture and international aid). Fortunately, in the case of international aid, countries with missing data simply did not receive aid (i.e., wealthy countries), therefore, for these 26 countries a value of 0 was assigned.

Table 3.2: Missing Country Counts: Key Institutional Variables by Geographic Region

Factors	Total Missing	Number Countries Missing by Geographic Region						
		Africa *(n=2)*	Asia *(n=5)*	Europe *(n=23)*	LAC* *(n=12)*	Middle East *(n=11)*	North America *(n=1)*	Oceania *(n=1)*
Civil Society	29	--	3	7	7	11	--	1
Social Enterprise	30	--	4	7	7	11	--	1
Culture: Uncertainty	26	1	--	9	6	9	--	1
Culture: In-group collectivism	26	1	--	9	6	9	--	1
International Aid	26	--	3	19	--	3	1	--
Economic Competitiveness / Economy Type	5	--	--	--	--	4	--	1
Welfare State	5	--	2	1	1	1	--	--
Governance	0	--	--	--	--	--	--	--
R&D	8	--	--	--	2	5	--	1
STEM	12	1	--	--	3	7	--	1
Patent	7	--	--	--	1	5	--	1
Market Size / Commercial Opp.	2	--	--	--	1	1	--	--
Human Development	1	--	--	--	--	1	--	--
Inequality Opp.	14	--	3	6	--	4	--	1
Environmental Opp.	4	1	1	--	--	1	--	1

* Note: Latin America and the Caribbean

Based on these missingness counts, I examined patterns in the data in order to determine if values are missing at random (MAR) or missing completely at random (MCAR) using Little MCAR test[28]. Little's MCAR test was conducted, and the results were not significant, $\chi^2(431) = 454.81$, $p = .206$. This suggests that the data was missing completely at random (MCAR), and multiple imputation could be done on the data. As a result, I attempted to impute values using multiple imputation where feasible.

Due to the large amount of missing data, and the low sample size of countries, multiple imputation could only be done on a couple of variables. I did not impute values for Models of Civil Society or for Models of Social Enterprise. While these are the two variables with the most missingness I did not to attempt to impute values simply because it is still unclear how well existing packages (including Amelia II in R) can handle nominal variable imputations.[29] Imputing values in this instance was simply too risky. Cultural regions were examined to assess which regions had higher levels of imputed data. The Middle East and Latin American cultures had the highest frequencies of imputed culture variables. Table 3.3 presents the frequencies of imputed vs. non-imputed data by cultural region. In order to reduce and check for biased estimates, the imputed values were then compared to non-imputed values to identify significant differences (Goodman & Blum, 1996; Little & Rubin, 2002).

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[28] Little's MCAR test checks to see if the data was MCAR and therefore if imputation is appropriate. The null hypothesis states that the data are MCAR (missing completely at random). If the test statistic is significant then the data are considered either Missing At Random (MAR), or Missing Not At Random (MNAR).

[29] According to the creators of the Amelia II package (Honaker, King, & Blackwell, 2013), Amelia can only assign imputed values for categories that are preexisting in the data. That is, Amelia cannot identify new models of civil society or social enterprise that may very well exist (for example, most countries in the Middle East are not classified, and may warrant a new model specification, as opposed to an existing one).

Table 3.3: Imputed vs. Non-Imputed Cultural Regions

Region	Non-Imputed	Imputed
Anglo	2	0
Confusion Asia	4	0
Eastern Europe	4	3
Germanic Europe	3	1
Latin America	6	5
Latin Europe	4	1
Middle East	1	9
Nordic Europe	2	3
Southern Asia	2	3
Sub-Saharan Africa	1	2

Independent sample *t* tests were conducted to compare the imputed values against the non-imputed values. Table 3.4 presents the results of the *t* tests comparing the imputed data. Imputed in-group collectivism societal practices values tended to be significantly higher than the non-imputed values, $t\ (52) = -2.25$, $p = .029$. No significant differences were found between imputed and non-imputed uncertainty values, $t\ (52) = -1.42$, $p = .160$. This is an acceptable outcome. Of the five regions of the world with the greatest number of imputed values (i.e., Middle East, Latin America, Eastern Europe, Southern Asia and Nordic Europe), all had in-group collectivism practices mean scores that were significantly higher than the others ($p < .05$) with the exception of Nordic Europe (House et al., 2004). Therefore, as expected the Amelia II package accurately predicted values for the two macro-institutional variables with continuous values.

Table 3.4: Independent Sample t Tests Comparing Imputed and Non-Imputed Values

	Imputed		Non-Imputed			
Variable	*M*	*SD*	*M*	*SD*	*t*(52)	*P*
In-Group	5.04	0.72	5.45	0.67	-2.25	.029
Uncertainty	4.58	0.58	4.79	0.45	-1.42	.160

Level-1 Missingness

Missing values were problematic at the organizational level as well (See Table 4.4 in the next section). Of the social enterprises (n=1146) just 145 (13%) had valid responses on entrepreneurial motivation (i.e., necessity vs. opportunity based entrepreneurship or both). On the other hand for percentage of volunteers, 809 social enterprises had valid data (71%). Less problematic were the innovation type variables (product, process and marketing) with available data on a minimum of 1114 (97%) and up to 1131 (99%) social enterprises.

Multicollinearity

There are up to 14 predictor variables identified in this study, so running a complete model which included all of the institutional variables was impossible; the model simply would not converge. Level-2 variables were removed as needed for model convergence while attempting to maintain a minimum group size of 30. Variables were examined to assess for multicollinearity prior to each analysis and the most informative of the collinear variables were retained and the others dropped as needed to reduce the number of predictors in the models. As additional predictors were added into the model, listwise deletion in the models made it difficult to include all the predictors possible. The estimation of Level-2 fixed effects also becomes more difficult when the nesting group is

limited (Heck, Thomas, and Tabata, 2012). By using fewer predictors, the power of the model can be increased by using the maximum number of countries available.

3.8 Summary

To review, the multiple secondary global datasets described above illustrate how I approach answering the research questions relating to global patterns of social enterprise and social enterprise innovation. The sources of data and their corresponding indicators are the source of the country-level institutional and opportunity predictors utilized in this study. Next, I presented the key dependent (social enterprise and social enterprise innovation) and organizational-level independent variables, as well as any controls. Building on the data sources described above, the next section examines the impact of country-level (level-2) and organizational-level (level-1) predictors in social enterprise and social enterprise innovation. Missingness at level-1 and level 2, as well as issues of multicollinearity were carefully considered prior to analyzing each research question and hypothesis. As a result, the combination of variables used to construct statistical models varied across questions. The decision on which variables to include in the models are described in detail prior to conducting any multilevel or linear regression analyses. In general, the careful consideration of how to handle issues of multicollinearity, missingness along with the analytical strategies discussed above allowed me to successfully determine which factors had an impact on social enterprise and social enterprise innovation.

CHAPTER 4

ANALYSIS AND RESULTS

4.1 Overview

This type of study requires successive analytical steps. First, I constructed the dataset and prepared it for analysis.[30] Constructing the dataset required merging level-1 and level-2 datasets thereby assigning organizational-level values to groups at level-2. Data were cleaned according to the operationalizations specified in the previous section. Because two types of predictors are used in this study: organizational variables (level-1) and country variables (level-2), I built two separate datasets for each level of analysis and combined them into a single mixed model in order to run the analysis. The level-1 data contained organizational-level variables from the 2009 GEM dataset. Level-2 dataset consists of country-level variables (institutions and opportunities) from the variety of data sources described in the section above (see Appendix C). Level-2 variables were all time lagged (i.e., most recent values between the 2000 and 2008) to support a causal premise without the loss of power[31].

Next, I categorized countries by civil society and economy type. This meant identifying countries as either 'core' or 'borderline' Liberal, Welfare Partnership, Social Democratic, Deferred Democratization or Traditional civil society types (Salamon & Sokolowski, 2010); and by core or 'transition' Factor, Efficiency or Innovation-driven economy types based on the data available (Sala-i-Martin, 2010). This classification

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[30] Reliability of GEM data: GEM data has been validated against official national new firm counts (Reynolds et al., 2005).

[31] Although most data are from 2008 no data points were obtained for values earlier than 2000. This allowed me to preserve variables in the model that might otherwise have been dropped. GLOBE cultural values are older (1993), but presents little trouble for the model, as cultural preferences are highly stable over time.

allowed me to match countries (civil society by economy type) and identify comparative models of social enterprise and subsequently expand the number of country cases that fit Kerlin's models of social enterprise (see Table 4.1, additional countries are in italics).

Table 4.1: Expanded Models of Social Enterprise

		Economy Type		
		Factor-driven	Efficiency-driven	Innovation-driven
Civil Society	Liberal	_	_	Autonomous Diverse Ex. United States, *United Kingdom, Switzerland (B)*
	Welfare Partnership	_	_	Dependent Focused Ex. France, Israel, Netherlands, Belgium, *Denmark (B)*, Italy, Germany, *Japan (B), Spain (B)*
	Social Democratic	_	_	Enmeshed Focused Ex. Sweden, Austria, *Norway, Finland (B)*
	Deferred Democrati-zation	_	Autonomous Mutualism Ex. *Argentina (B),* Ukraine, *Brazil, Peru, Chile (B), Romania (B), Russia, (Transitional) Colombia (B)*	(Transitional) Ex. Slovak Republic, *Hungary (B), Czech Republic (B)*
	Traditional	Sustainable Subsistence Ex. Zimbabwe, Uganda	(Transitional) Ex. South Africa (B)	_

Note. B = Borderline country for model of civil society
Source: Kerlin (2013)

In the paragraphs that follow, I describe how I arrived at a more complete dataset in order to successfully run the multilevel models.

4.2 Descriptive Statistics

Descriptive statistics for level-1 and level-2 data are summarized below. Tables present the frequencies, percentages, averages and standard deviations of the key social enterprise variables.

4.2.1 Country-level Data

Data from 54 different countries[32] were used for the analyses. Descriptive statistics illustrate the frequency and percentage of the key dependent and independent variables in this dissertation. I first present descriptive statistics of all country-level and organizational-level data. I follow with a summary of the data grouped by geographic region, economy type, models of civil society[33], and models of social enterprise (*CSE*).

Following Kerlin (2013) countries were identified as core or peripheral CSE by matching economy types with the models of civil society. Many countries came from Europe (21; 39%) and were innovation-driven (20; 37%). The most-common models of civil society were welfare partnership (5; 9%) and deferred democratization (8; 15). For both the civil society and social enterprise models, core and peripheral cases were combined where possible in order increase the number of cases in each category for subsequent analyses (see Table 4.1). The most-common model of social enterprise was the Dependent Focused (9; 17%). Frequencies and percentages are presented in Table 4.2 below.

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[32] There were no values for the Czech Republic and so this country was dropped from subsequent analyses, bringing our total country count to 54. Likewise, Oceania is represented in our GEM dataset by one country (Tonga), while Africa is represented by two (South Africa and Uganda) minimizing the quality of representation of these world regions.

[33] Due to missing values civil society was removed from subsequent analysis. This poses a significant set-back in that one of the most important variables in the CSE framework is excluded. As a result, I am unable to determine if civil society significantly influenced social enterprise or social enterprise innovation.

Table 4.2: Frequencies and Percentages for Country-level Data

Variable	*n*	%
Geographical region		
Northern America	1	2
Europe	21	39
Asia	5	9
Latin America and the Caribbean	12	22
Middle East	12	22
Africa	2	4
Oceania	1	2
Economy Type		
Factor-driven	2	4
Stage 1 transitional	11	20
Efficiency-driven	15	28
Stage 2 transitional	2	4
Innovation-driven	20	37
Missing	4	7
Models of Civil Society		
Liberal	3	6
Welfare partnership	6	11
Social democratic	2	4
Deferred democratization	8	15
Traditional	2	4
Social democratic / Welfare partnership borderline	1	2
Welfare partnership / Deferred democratization borderline	3	6
Missing	29	54
Models of Social enterprise		
Autonomous diverse	3	6
Dependent focused	9	17
Enmeshed focused	2	4
Autonomous mutualism	7	13
Sustainable Subsistence	1	2
Autonomous mutualism / Enmeshed focused	1	2
Sustainable Subsistence / Autonomous mutualism	1	2
Missing	30	56

Note. Borderline / peripheral countries were collapsed into their parent models for civil society and social enterprise.

Descriptive statistics were also calculated for each of the interval-level country variables. Interval-level institutional and opportunity country variables included:

- economic competitiveness rank (GCI.Rank)
- welfare state (i.e., public education (PubEd); public health (PubHlth))
- governance factors (WGI.Eff, WGI.Rule, WGI.Corr, WGI.Reg)
- uncertainty avoidance (Uncert)
- in-group collectivism (Ingrp)
- international aid (IntlAid)
- ease of doing business rank (DBI)
- research and development (RD)
- STEM workforce (STEM)
- patents (Patent)
- commercial opportunities / gross national income (GNI)
- human development (HumDev)
- income inequality (GINI)
- environmental opportunities (Envir)

These data were all examined for missing values. The two culture variables (uncertainty avoidance, and in-group collectivism) had almost half (46%) of the data missing. Skewness was also examined to assess for normality. International aid, patents, and total population were all highly skewed. These variables were transformed via a natural log transformation.

Table 4.3: Mean, Standard Deviations, Range and Skewness for Country Data

Variable	*N*	Min	Max	*M*	*SD*	Skew
Economic Competitiveness						
Global Competitiveness Index Rank	49	1.00	120.00	47.94	33.15	0.30
Welfare State						
Public Education	48	0.80	7.70	4.70	1.42	-0.62
Public Health	48	1.30	8.70	4.68	2.18	0.20
Governance						
Effectiveness	54	-1.32	2.24	0.45	0.95	0.17
Regulation	54	-1.64	1.98	0.43	0.93	-0.28
Corruption	54	-1.15	2.47	0.34	1.06	0.55
Rule of Law	54	-1.60	1.96	0.32	1.00	0.14
Culture						
Uncertainty	29	3.24	5.36	4.58	0.58	-0.71
In-group collectivism	29	3.53	6.03	5.03	0.72	-0.61
International Aid						
International aid	54	0.00	686.77	37.09	105.31	4.95
(log) International aid*	54	0.00	6.53	1.69	1.92	0.76
Market Strength						
Ease of Doing Business	54	3.00	164.00	65.22	43.03	0.19
Gross national income	52	380.00	85,580.00	20,112.88	20,207.89	1.14
Opportunities						
Income Inequality	41	25.79	67.40	40.84	9.37	0.66
Human Development	53	0.00	1.00	0.78	0.12	-0.88
Environment	50	34.58	77.80	55.87	9.94	-0.21
Innovation Capacity						
Research and Development	46	0.02	4.77	1.27	1.16	1.14
STEM Workforce	42	39.44	7,689.31	2,252.46	2,120.94	0.97
Patent	47	7.00	456,321.00	33,364.23	96,627.93	3.52
(log) Patent	47	1.95	13.03	7.70	2.40	0.29
Controls						

Table 4.3 (Continued)

Total population	54	102,947	1,324,655,000	58,007,443	183,380,764	6.50
(log) Total population	54	11.54	21.00	16.54	1.60	-0.24

Note. * International aid was transformed by adding 10.35 to each value so that there were no negatives when the natural log was taken.

4.2.2 Organizational-level Data

Data was also included at the organizational level within each country. As described above, the GEM survey collected data from a total of 181,074 individuals from 54 different countries / territories. Of the respondent data GEM collected, 24,759 individuals were currently owning or managing a business. Only 5% of the businesses (1,146) were operationalized as existing social enterprises. The remainder were either traditional non-profit organizations (1,510) or conventional businesses (22,103). This study is focused on existing social enterprises, therefore the key characteristics of this organizational type are presented in subsequent tables. Most social enterprises tended to be opportunity-driven (92; 63%). Of the innovative social enterprises, most innovations were in marketing (661; 59%). Frequencies and percentages for these data are presented in Table 4.4.

Table 4.4: Frequencies and Percentages on Social Enterprise Data

	Social enterprises	
Variable	*n*	%
Entrepreneurial motivation		
Necessity	36	25
Opportunity	92	63
Both	17	12
Total	145	
Product innovation		
No	726	64
Yes	404	36
Total	1130	

Table 4.4 (Continued)

Process innovation		
No	585	53
Yes	529	48
Total	1114	
Marketing innovation		
No	456	41
Yes	661	59
Total	1117	
All three innovation types		
None	336	30
One	263	23
Two	265	23
Three	267	24
Total	1131	

Social enterprise areas of impact (or sectors) were coded using the twelve response categories of the International Classification of Non Profit Organizations (ICNPO): culture and recreation (*ArtSec*); education and research (*EduSec*); health (*HlthSec*); social services (*ServSec*); environment (*EnvSec*); development and housing (*DevSec*); law, advocacy and politics (*LawSec*); philanthropic intermediaries and voluntarism promotion (*FundSec*); international (*IntlSec*); religion (*SpiritSec*); business and professional associations; unions (*UnionSec*); and not elsewhere classified (*OthSec*). The total number of businesses that fit each category was calculated as well as the proportion of businesses that fit each category. The proportion was calculated by dividing the number of businesses with that area of impact within a country by the total number of businesses within that country examined. Thus, the proportion accounts for the number of total businesses examined to compare those countries with fewer businesses to those countries with a very high number of businesses surveyed.

Overall, there were a total of 32 countries with available data on areas of impact. There was a higher proportion of businesses with culture and recreation (M = 0.20, SD = 0.22) and social services (M = 0.20, SD = 0.22) compared to the other sectors. Of the 12 areas of impact or sectors, each country had social enterprises that on average operated in

5.44 areas (*SD* = 3.81). Means and standard deviations of responses are presented in Table 4.5.

Table 4.5: Frequencies and Percentages for Areas of Impact

Response	Average *n*	*n SD*	Average proportion	Proportion *SD*
Areas of Impact				
Culture	10.72	30.55	0.20	0.22
Education	5.25	15.28	0.09	0.10
Health	1.84	4.66	0.06	0.10
Social Services	9.94	29.15	0.20	0.22
Environment	1.94	5.50	0.05	0.09
Development	3.25	9.42	0.06	0.08
Law	1.78	3.92	0.04	0.08
Philanthropy	1.53	4.26	0.02	0.04
International	0.34	0.75	0.01	0.02
Religion	0.81	2.28	0.01	0.02
Business	0.31	0.78	0.01	0.02
Other	3.25	5.39	0.19	0.27
Total businesses	31.09	72.93	-	-
Total number of sectors	5.44	3.81	-	-

Descriptive statistics were also constructed for interval variables. There was partial missingness for percentage of income from sales revenue, and percentage of volunteers. Variables were also examined for skewness. Organization age and organization size were severely skewed. A square root transformation was used to give organization age a more-normal distribution. No single transformation could be done to give organization size a more-normal distribution, and thus caution was taken when using this variable in later analyses. Table 4.6 presents descriptive statistics for the interval-level social enterprise data.

Table 4.6. Descriptive Statistics for Other Interval Social Enterprise Variables

	n	Min	Max	*M*	*SD*	Skew
Percentage of income from commercial revenue	900	1.00	100.00	60.75	35.43	-0.26
Percentage of volunteer workers	809	0.00	100.00	57.21	44.72	-0.30
Organization Age	1002	-1.00	309.00	17.24	30.33	3.61
(square root) Organization Age*	1002	1.00	17.64	3.60	2.50	1.70
Organization Size	1010	0.00	140,700.00	371.98	4,736.27	26.38

Note. * Organization age was transformed by adding 2.00 to each value so that there were no negatives when the square root was taken.

4.2.3 Descriptive Statistics on Social Enterprise

In order to better understand the landscape of social enterprise organizations across the globe, I calculated frequencies and percentages of variables of social enterprise organizations and present them by geographic location, economy type, model of civil society and model of social enterprise. I present these analyses below with tables presented in the appendix, with the exception of the CSE models whose tables (Tables 4.7; 4.8 and 4.9) are presented in the main text.

Social Enterprise: Entrepreneurial Motivation and Innovation

Geographic location

Frequencies and percentages of entrepreneurial motivation and innovation were calculated for social enterprises by geographical location. Most of the social enterprises across all geographical locations were opportunity driven, except for in Africa (12, 63%) where the majority of the social enterprises were necessity-driven. The location with the

highest social enterprise percentage was Europe (66, 73%). Asia had the highest Oslo product innovation percentage (11, 69%) and marketing innovation percentage (11, 79%) while the Middle East had the highest process innovation (5, 63%) percentage. Asia also had the highest percentage of social enterprises that contained all three Oslo innovation types (7, 44%). Frequencies and percentages for the organization level data by geographical location for social enterprises are presented in the Appendix E, Table E.1.

Economy Type:

Frequencies and percentages of entrepreneurial motivation and innovation were also calculated for social enterprises by economy type. The social enterprises in factor-driven and efficiency-driven economies tended to be necessity-based while the social enterprises in stage 1 transitional (i.e., moving from factor- to efficiency-driven) and innovation-driven economies tended to have opportunity-based motivations. Stage 2 transitional (i.e., countries moving from efficiency to innovation-driven) (36, 8%) and innovation-driven (882, 7%) economies had the highest percentages of social enterprise organizations. Stage 1 transitional social enterprises also had the highest percentages for product (30, 61%), process (33, 69%), and marketing innovations (33, 73%), as well as all three Oslo innovations (20, 41%). Frequencies and percentages for the organizational-level data by economy type for social enterprises are presented in the Appendix, Table E.2.

Civil Society:

Frequencies and percentages were calculated for civil society types. Each model of civil society tended to be opportunity-based except for deferred democratization and traditional which tended to be necessity-based. The social democratic models had the highest percentages for product innovation (35, 47%). The traditional model tended to have the highest percentage of process innovations (11, 55%) while borderline welfare

partnership / social democratic models had the highest percentages for marketing innovations (95, 75%). Finally, social democratic countries had the highest percentages of social enterprises with all three Oslo innovations (18, 25%). Frequencies and percentages are presented in the Appendix, Table E.3.

Models of Social Enterprise:

Nominal social enterprise data was also examined by models of social enterprise (CSE). Each CSE type tended to be opportunity-driven, with the exception of Autonomous Mutualism and Sustainable Subsistence. The Enmeshed Focused model had the largest percentages of product innovations (35; 47%). The Sustainable Subsistence model had the highest percentage for process innovations (9; 53%) and the Dependent Focused model had the highest percentage of marketing innovations (161; 65%). Both Enmeshed Focused and Autonomous Mutualism models had the highest percentage for having all three innovation types (25%). Frequencies and percentages for the nominal social enterprise data by CSE are presented in Table 4.7 below.

Table 4.7: Frequencies and Percentages of Social Enterprise Data by Models of Social Enterprise

	Autonomous Diverse		Dependent Focused		Enmeshed Focused		Autonomous Mutualism		Sustainable Subsistence		Autonomous Mutualism / Enmeshed Focused		Sustainable Subsistence / Autonomous Mutualism	
Variable	*n*	%	*n*	%	*N*	%	*n*	%	*n*	%	*n*	%	*n*	%
Entrepreneurial Motivation														
Necessity	2	4	2	8	0	0	8	42	12	67	1	50	0	0
Opportunity	36	78	20	77	1	100	7	37	6	33	1	50	1	100
Both	8	17	4	15	0	0	4	21	0	0	0	0	0	0
Product innovation														
No	308	66	178	72	39	53	44	64	15	68	5	100	2	67
Yes	157	34	68	28	35	47	25	36	7	32	0	0	1	33
Process innovation														
No	253	55	127	52	41	55	33	48	8	47	3	60	1	33
Yes	206	45	116	48	34	45	36	52	9	53	2	40	2	67
Marketing Innovation														
No	189	41	86	35	43	58	24	34	8	40	4	80	1	33
Yes	271	59	161	65	31	42	46	66	12	60	1	20	2	67
All three innovation types														
None	148	32	56	23	26	36	16	23	6	27	2	40	1	33
One	102	22	79	32	12	16	16	23	8	36	3	60	0	0
Two	104	23	70	28	17	23	20	29	4	18	0	0	1	33
Three	108	23	42	17	18	25	17	25	4	18	0	0	1	33

Social Enterprise: Areas of Impact

Geographic Location:

The proportions of areas of impact were also examined by geographical location. Africa, Asia, North America and Oceania only had one country with data for the proportions available, and thus no standard deviations were computed. Northern America (i.e., the United States) had high proportions in education in research (0.25), social services (0.22) and development and housing (0.22). Europe had high proportions in culture and recreation (0.24). Asia had a high proportion in social services (0.22). Latin America and the Caribbean had high proportions in culture and recreation (0.23) and other sectors (0.27). Proportions for areas of impact and impact diversity by geographical location are presented in the Appendix Table E.4.

Economy Type:

Next, proportions of areas of impact were calculated by economy type. The factor-driven and stage 2 transition economies (factor to efficiency economy type) only had one country with data available, and thus no standard deviations were computed. The factor-driven country had high proportions in social services (0.58), and development and housing (0.29). Stage 1 transition countries had high proportions in other areas (0.51). Efficiency-driven countries had a high proportion in social services (0.24). The stage 2 transition country had a high proportion in culture and recreation (0.50). The innovation-driven countries had high proportions in culture and recreation (0.25) and social services (0.20). Proportions for areas of impact and impact diversity by economy type are presented in the Appendix Table E.5.

Civil Society:

The proportions of areas of impact were also examined by models of civil society. Traditional and welfare partnership / deferred democratization borderline countries only had one country with data, and thus no standard deviations were computed. The liberal / welfare partnership borderline countries did not have any data available for areas of impact. High percentages in the culture and recreation sectors were found for welfare partnerships (0.25), social democratic (0.23), deferred democratization (0.31) and welfare partnership / deferred democratization borderline countries. High proportions for social services were found in liberal (0.20) and social democratic (0.29) countries. The traditional country had a high proportion for development and housing (0.29). Proportions for areas of impact and impact diversity by civil society are presented in the Appendix Table E.6.

Models of Social Enterprise:

The proportions of areas of impact were calculated for the country-level social enterprise models with areas of impact data available (n= 20). Sustainable subsistence and autonomous mutualism / enmeshed focused borderline countries only had one country with data for the proportions available for each, and thus no standard deviations were computed. Unfortunately, the sustainable subsistence / autonomous mutualism borderline countries did not have any data available for areas of impact. High percentages in the culture and recreation sectors were found for dependent focused (0.29), enmeshed focused (0.23), autonomous mutualism (0.27) and autonomous mutualism borderline (0.50) countries. High proportions for social services were found in autonomous diverse (0.20) and enmeshed focused (0.29) countries. The single country that fit the sustainable subsistence model (Uganda) had a high proportion in the social

services (0.58) as well as the development and housing sector (0.29). Proportions for areas of impact and impact diversity by models of social enterprise are presented in Table 4.8. The most diverse CSE models were the dependent focused, enmeshed focused and autonomous diverse models.

Table 4.8: Frequencies and Percentages for Areas of impact by Models of Social Enterprise

	Autonomous Diverse		Dependent Focused		Enmeshed Focused		Autonomous Mutualism		Sustainable Subsistence		Autonomous Mutualism / Enmeshed Focused	
Area of impact	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Culture	0.17	0.20	0.29	0.16	0.23	0.02	0.27	0.38	0.04	-	0.50	-
Education	0.15	0.13	0.15	0.06	0.10	0.05	0.07	0.13	0.17	-	0.00	-
Health	0.08	0.08	0.02	0.03	0.07	0.01	0.05	0.06	0.08	-	0.00	-
Social Services	0.20	0.20	0.15	0.08	0.29	0.06	0.16	0.20	0.58	-	0.00	-
Environment	0.04	0.04	0.05	0.06	0.02	0.02	0.02	0.06	0.00	-	0.00	-
Development	0.12	0.11	0.09	0.06	0.05	0.07	0.01	0.03	0.29	-	0.17	-
Law	0.03	0.03	0.06	0.06	0.02	0.02	0.05	0.08	0.00	-	0.00	-
Philanthropy	0.05	0.04	0.03	0.03	0.01	0.01	0.01	0.01	0.04	-	0.00	-
International	0.01	0.01	0.02	0.03	0.02	0.02	0.00	0.00	0.00	-	0.00	-
Religion	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00	-	0.00	-
Business	0.00	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	-	0.00	-
Other	0.01	0.02	0.12	0.12	0.02	0.02	0.14	0.22	0.04	-	0.00	-
Total diversity	7.33	6.43	8.33	3.01	7.50	4.95	3.33	3.14	7.00	-	2.00	-

Social Enterprise: Other Interval Variables

Geographic location:

Means and standard deviations were calculated for social enterprise percent sales revenue and volunteers by geographic location. Latin America and the Caribbean had the highest mean for sales (68.93) while Africa had the lowest percentage for sales (40.50). Asia had the lowest percentage of volunteer workers (34.21) while Oceania (n=1) had the highest (91.24). Table E.7 presents the means and standard deviations by geographical location.

Economy Type:

Means and standard deviations were also calculated for percent sales revenue and volunteers by economy type. Efficiency-driven countries tended to have the highest average percent revenue from sales (64.55) while factor-driven economies had the lowest (41.52). Factor-driven countries had the lowest percentage of volunteer workers (50.00) while efficiency-driven countries had the highest (76.25). Table E.8 presents the means and standard deviations by economy type.

Civil Society:

Means and standard deviations were also calculated for percent sales revenue and volunteers by civil society. Welfare partnership countries had the largest mean for percent revenue from sales (67.50) while traditional countries had the lowest mean (40.50). Social democratic countries had the lowest percentage of volunteer worker (60.52) while deferred democratization countries had the highest (77.13). Table E.9 presents the means and standard deviations by models of civil society.

Models of Social Enterprise:

Lastly, means and standard deviations were calculated for percent sales revenue and volunteers by model of social enterprise. Autonomous diverse countries had the highest mean for sales (66.17) while sustainable subsistence / autonomous mutualism borderline countries had the lowest mean (33.33). Sustainable subsistence countries had the lowest percentage of volunteer workers (55.45) while sustainable subsistence / autonomous mutualism borderline countries had the highest mean (82.29). Table 4.9 presents the means and standard deviations by model of CSE.

Table 4.9: Means and Standard Deviations for Sales Revenue and Volunteers by Models of Social Enterprise

	Sales		Volunteers	
Model of Social Enterprise	*M*	*SD*	*M*	*SD*
Autonomous Diverse	66.17	34.92	64.55	43.07
Dependent Focused	62.84	35.03	60.40	45.39
Enmeshed Focused	57.62	39.01	60.52	47.12
Autonomous Mutualism	66.15	29.13	78.90	35.57
Sustainable Subsistence	41.52	34.63	55.45	47.19
Autonomous Mutualism / Enmeshed Focused	61.67	43.11	72.62	40.51
Sustainable Subsistence / Autonomous Mutualism	33.33	20.82	82.29	26.89

4.3 Correlational Analyses

Variable Construction

With the large amount of missing data, groups of variables were examined to assess for multicollinearity, as well as for ways to combine or drop variables to reduce the number of predictors in the models. Public education and public health were related ($r = .48$, $p < .001$, $n = 48$). Because these variables represent the same theoretical construct (see Kerlin 2013), they were combined into a single "welfare state" variable by

summing both percentages. Table 4.10 below presents the descriptive statistics for welfare state.

Table 4.10: Descriptive Statistics for Welfare State

Variable	*n*	Min	Max	*M*	*SD*	Skew
Welfare State	48	2.60	16.40	9.37	3.12	0.00

The four governance (WGI) variables were positively correlated as well (i.e., Rule of Law, Government Efficiency, Regulation and Corruption). Correlations ranged from .89 to .95. Therefore, the decision was made to combine the four governance variables, thus treating them as four dimensions of a single "governance" index by averaging them. Table 4.11 presents the results of the correlations while Table 4.12 presents the descriptive statistics for governance.

Table 4.11: Correlations between WGI Variables

	WGI Efficiency	WGI Regulation	WGI Corruption
WGI Regulation	.92**	-	
WGI Corruption	.94**	.89**	-
WGI Rule	.95**	.91**	.94**

Note. * $p < .05$. ** $p < .01$.

Table 4.12: Descriptive Statistics for Governance

Variable	*n*	Min	Max	*M*	*SD*	Skew
Governance	54	-1.30	2.14	0.39	0.96	0.21

The two culture variables (uncertainty avoidance and in-group collectivism) were also significantly correlated ($r = .93$, $p < .001$, $n = 29$) as were, ease of doing business rank (DBI) and gross national product (GNI). Although DBI and GNI were significantly correlated, $r = -.63$, $p < .001$, $n = 52$, because the relationship was negative, these values were not combined. Instead, only the GNI was used as it incorporates more information and allows for greater variability since it is a scale variable compared to DBI, which is a rank-ordered variable. In the next section I begin answering research questions followed by an interpretation of the results.

4.4 Answering the Research Questions

4.4.1 Research Question 1: National Predictors of Social Enterprise

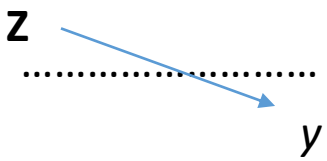
Overview:

Research question 1, and more specifically sub-questions 1.1 and 1.2, ask if there is clustering of social enterprise organizations by country. Theoretically, an answer to these questions reveal if country-level factors can explain a significant amount of variation in social enterprise. If so, results would lend support for Kerlin's comparative social enterprise framework (see Figure 1.1) which claims that the national context of social enterprise can significantly influence the occurrence and characteristics of the social enterprise sector in a country. Analytically, this questions reveals whether or not a multilevel-modeling approach is worth conducting or if a single-level approach would suffice. I answer this research question as well as each sub-question and hypothesis in turn before summarizing the results and moving on to research question 2.

Analytical Approach:

In order to aid in the interpretation of results, as well as avoid issues of severe multicollinearity and redundancy (due to missingness) I begin by running the model with just Kerlin's institutional variables. I then run a second model in order to determine if the opportunity variables explain any additional variation in social enterprise. In both instances predictors were first treated as fixed effects as opposed to allowing the slopes to randomly vary within the model (i.e., random intercepts).

Figure 4.1: The Macro-Micro Relationship for Social Enterprise



Source: Snijders & Bosker (2012)
Note: In this figure **Z** represents the macro-institutional and opportunity variables at level-2 and **y** represents social enterprise at level-1.

Research Question 1:

1. Does size and shape social enterprise (SE) vary by country? If so, how?

    1.1 Is the size of SE (i.e., number of social enterprise organizations in the country) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

        1.1.i. There will be more SE in countries with a strong civil society sector; strong governance system, low uncertainty avoidance and collectivist values; high economic competitiveness; and more international aid.

        1.1.ii. There will be more SE in countries with greater economic market strength

        1.1.iii. There will be more SE in countries with greater unmet social and/or environmental needs.

1.2 Is the shape (i.e., areas of impact, sales revenue) of social enterprise explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

Social Enterprise

Assumption Testing:

To examine research questions 1, 1.1 and 1.2, a mixed model binomial logistic regression was conducted to assess if economic competitiveness (GCI.Rank), welfare state, governance, civil society, uncertainty avoidance, in-group collectivism and international aid organization type (0 = other vs. 1 = social enterprise) controlling for total country population.

As stated previously, independent variables had to be assessed for multicollinearity prior to running each model. To do so, variance inflation factors (VIFs) were calculated. VIFs ranged from 1.36 to 9.72, indicating severe multicollinearity among the predictors. VIFs were the highest for governance (9.72) and in-group collectivism (7.10) and thus these factors were removed from the model. VIFs were recalculated, and values ranged from 1.12 to 3.57. The decision was made to keep the remaining variables as predictors. The predictors included: economic competitiveness rank, welfare state, uncertainty avoidance, and international aid, controlling for the total population of the country (TotPop).

Empty model

An empty model was run to assess if any of the variance in organization type is due to nesting the businesses by country. Given the small sample size (i.e., fewer than

100 country cases), a Satterthwaite[34] approximation was used, along with a robust estimation of the fixed effects, which is useful in smaller sample sizes (Heck, Thomas, & Tabata, 2012). Results of the model showed an estimate of 2.89 ($z = 4.23$, $p < .001$) for the variance in the random intercept of the empty model. This suggests that 46.7% (2.89 / 2.89 + 3.29) of the variance in organization type can be accounted for by country differences. Thus, the answer to research question 1 is: Yes, significant variance exists in the average probability of an organization being a social enterprise and therefore social enterprise does vary by country. Given more than sufficient amount of variance in social enterprise exists at level-2, I then examine if this variation can be explained by Kerlin's national-level institutions.

Random Intercepts: Institutions

Country-level fixed effects were then added into the model. Each of the country-level variables was centered to the grand mean (GMC). The country-level data was centered at the grand mean as there is no variability in the groups (countries) to center the variables at the group-level (Enders & Tofighi, 2007). Running this model however, reduced the number of countries from 54 to 25 with a total of 14,960 businesses (both social and conventional). This change was due to the large number of missing values for models of civil society (see Table 3.2). Results of the model showed an estimate of 1.56 ($z = 1.36$, $p = .055$) for the variance in the random intercept of the model. This suggests that there was not a significant amount of variance explained by nesting the businesses by country. Likewise the resulting model did not have any significant predictors. The results of the model are presented in Table 4.13.

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[34] A Satterthwaite approximation is useful when level-2 units vary considerably in size. Specifically, it corrects for calculating degrees of freedom providing a more conservative estimate of standard errors.

Table 4.13. Initial Model with Institutional Variables Predicting Social Enterprise

Source	*B*	*p*	*OR*
Intercept	-2.91	.045	0.06
Economic competitiveness (GMC)	0.02	.353	1.02
Welfare State (GMC)	0.55	.063	1.74
Uncertainty (GMC)	0.97	.311	2.63
(log) International Aid (GMC)	0.25	.434	1.29
Civil Society (reference: Liberal)			
Welfare Partnership / Deferred Democratization	-1.58	.226	0.21
Welfare Partnership / Social Democratic	0.39	.775	1.48
Traditional	-0.80	.604	0.45
Deferred Democratization	-1.05	.378	0.35
Social Democratic	0.68	.595	1.97
Welfare Partnership	-0.63	.437	0.53
(log) Total population (GMC)	-0.03	.917	0.97

Reduced Random Intercepts: Institutions

In order to retain as many countries as possible, the model was re-run without the civil society variable. In this model, 44 total countries were retained with data on 21,104 organizations (both social and conventional). Results of the model showed an estimate of 1.16 ($z = 3.29$, $p = .001$) for the variance in the random intercept of the model. This suggests that 26.1% (1.16 / 1.16 + 3.29) of the variance in organization type can be accounted for by country differences, indicating that there is still clustering of the data after removing the civil society variable.[35]

This model showed significance at the intercept ($p < .001$), economic competitiveness (GCI.Rank) ($p = .048$) and welfare state ($p < .001$). The negative intercept coefficient suggests that an organization in a country with an average economic

[35] Because level 1 variance is fixed at 3.29 for binary and ordinal logistic models, the percentage accounted for between two different models is not comparable. That is, the percentage is rescaled for each model.

competitiveness rank, average size welfare state (i.e., spending on public health and education), average uncertainty avoidance scores, average levels of international aid, and an average population size, has an odds ratio of 0.02 of being a social enterprise. Thus, the social enterprise in a country with these characteristics is 50.00 (calculated as 1 / 0.02) times more likely to not be a social enterprise than to be a social enterprise. For every one unit increase in national GCI.Rank, the likelihood of an organization being a social enterprise is multiplied by 1.02. For every one unit increase in welfare state, the likelihood of a country being a social enterprise is multiplied by 1.70. Results of the reduced model are presented in Table 4.14.

Table 4.14: Reduced Model with Institutional Variables Predicting Social Enterprise

Source	*B*	*p*	*OR*
Intercept	-4.04	< .001	0.02
GCI.Rank (GMC)	0.02	.048	1.02
Welfare State (GMC)	0.54	< .001	1.72
Uncertainty (GMC)	0.10	.822	1.11
(log) International Aid (GMC)	-0.10	.576	0.90
(log) Total population (GMC)	-0.02	.836	0.98

Next, the two institutional variables (governance, and in-group collectivism) removed from the initial model were examined for multicollinearity with each other. VIFs ranged from 1.04 to 2.89. Therefore, an additional model was constructed using just these variables. In this model, 53 countries were retained, along with 24,759 businesses. Results of the model showed an estimate of 1.94 ($z = 3.87$, $p < .001$) for the variance in the random intercept of the model. This suggests that 37.1% (1.94 / 1.94 + 3.29) of the variance in organization type can be accounted for by the country differences.

The resulting model showed significance of the intercept ($p < .001$) and in-group ($p = .007$). The intercept suggests that a business in a country with an average governance, in-group collectivism, and total population has an odds ratio of 0.02 of being a social enterprise. Thus, in this model, a business is 50.00 times more likely not to be a social enterprise than to be a social enterprise. For every one unit increase in in-group collectivism scores, the likelihood of a business being a social enterprise is multiplied by 0.25, or for every one unit increase in in-group collectivism, the likelihood of a country *not* being a social enterprise is multiplied by 4.00. Results of the second model predicting organization type are presented in Table 4.15.

Table 4.15: Multicollinear Institutional Variables Predicting Social Enterprise

Source	*B*	*p*	*OR*
Intercept	-4.20	< .001	0.02
Governance (GMC)	-0.04	.924	0.96
In-group collectivism (GMC)	-1.38	.007	0.25
(log) Total population	-0.13	.386	0.88

Random Intercepts: Opportunities

A model with the four opportunity variables (human development, environmental opportunities, gross national income (GNI), and income inequality (GINI)) was also examined. Variance inflation factors (VIFs) ranged from 1.69 to 3.39, indicating no multicollinearity issues. The model retained 38 countries and 16,230 businesses. Results of the model showed an estimate of 1.47 ($z = 3.08$, $p < .001$) for the variance in the random intercept of the model. This suggests that 30.9% (1.47 / 1.47 + 3.29) of the variance in organization type can be accounted for by country-level characteristics. Significance was found in the intercept ($B = -4.22$, $p < .001$, $OR = 0.02$) which suggests that a business in a country with average human development scores, environmental

opportunities, and commercial opportunities is 50.00 (1 / 0.02) times more likely to not be a social enterprise. Human development was also a significant predictor, $B = 7.82$, $p = .045$, $OR = 2{,}480.24$ (calculated as e^7.82), suggesting that as human development scores increase, the likelihood of an enterprise in the country being a social enterprise also increases. Since human development scores are measured as a percentage, for every one percent increase, the likelihood increases by 24.80 times. Results of the opportunity model are presented in Table 4.16.

Table 4.16: Full Model with Opportunity Variables Predicting Social Enterprise

Source	*B*	*p*	*OR*
Intercept	-4.22	< .001	0.02
Human development (GMC)	7.82	.045	2,480.24
Environmental opp. (GMC)	-0.01	.802	0.99
Commercial opp. (GMC)	0.00	.908	1.00
Income inequality (GMC)	-0.02	.517	0.98
(log) Total population (GMC)	0.06	.636	1.06

Sales Revenue

To answer research question 1.2, my original plan was to run a multilevel mixed model linear regression to assess if Kerlin's institutional variables: economic competitiveness (GCI.Rank), welfare state, governance, civil society, uncertainty avoidance, and international aid predicted the percent of sales revenue while controlling for total population. However, after running the empty model, the variance for the randomly varying intercept could not be computed and was thus set to zero. Because none of the variance in the dependent variable could be accounted for by country types, the mixed model was not continued (i.e., the shape of social enterprise with regards to sales did not vary by country).

Diversity of Areas of Impact

Areas of impact was constructed as a level-2 variable, and measured as the total number of social enterprise impact categories within a country. As a result, it was treated as an ordinal variable and a multi-level analysis was not appropriate. Instead, each country varied in its impact diversity, and variation in the shape (i.e., areas of impact) was presumed. Ordinal regressions could not be conducted either, as the number of categories for diversity was too high to divide into several binary logistic regressions (up to 12) and the total number of countries (36-32) was too small to run an ordinal regression. Thus, in order to gain some insight, bivariate correlations were conducted instead. Spearman correlations were conducted to examine the relationships between national-level factors: economic competitiveness (GCI.Rank), welfare state, governance, uncertainty avoidance, in-group collectivism, international aid; social, environmental and commercial opportunities (gross national income), and income inequality with areas of impact. Results showed positive relationships for welfare state, governance, social and commercial opportunities. Negative relationships were found for economic competitiveness (GCI.Rank), uncertainty avoidance, and in-group collectivism.

Table 4.17: Spearman Correlations between National-Level Variables and Impact Diversity

Variable	Impact diversity
Economic competitiveness (GCI.Rank)	-.55**
Welfare state	.60**
Governance	.55**
Uncertainty avoidance	-.44*
In-group collectivism	-.56**
(log) International aid	-.04
Human development	.38*
Environmental opportunities	.35
Commercial opportunities	.49**
Income inequality	-.25

Note. * $p < .05$. ** $p < .01$.

A table summarizing the results for Research Questions 1, 1.1 and 1.2 and Hypotheses 1.2.i, 1.2.ii and 1.2.iii is presented below.

Table 4.18: Research Question 1: National Predictors of Social Enterprise Results Summary

Research Question / Hypothesis	Result
Research question 1: Does size and shape social enterprise (SE) vary by country?	Yes. Social enterprises do cluster by country.
Research Question 1.1: Is the size of SE (i.e., number of social enterprise organizations in the country) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?	Yes. The number of social enterprise in a country significantly varied by economic competitiveness (+) the size of the welfare state (+), in-group collectivism (-), and human development (+).
Hypothesis 1.1.i: There will be more SE in countries with a strong civil society sector; strong governance system, low uncertainty avoidance and collectivist values; high economic competitiveness; and more international aid.	Partially supported. The number of social enterprises in a country significantly varied by GCI rank (+) welfare state (+), and in-group collectivism (-).
Hypothesis 1.1.ii: There will be more SE in countries with greater economic market strength	Not supported. The relationship between market strength (i.e., gross national income (GNI)) and the size of social enterprise was not significant.
Hypothesis 1.1.iii: There will be more SE in countries with greater unmet social and/or environmental needs.	Not supported. The number of social enterprises in a country significantly varied by human development (+). Implying social enterprises are more likely in countries with higher as opposed to lower human development scores.
Research Question 1.2: Is the shape (i.e., areas of impact, sales revenue) of social enterprise explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?	Yes, partially. Sales revenue did not vary randomly by country. However, significant correlations were found between areas of impact and economic competitiveness (-), uncertainty avoidance (-), in-group collectivism (-), welfare state (+), governance (+), human development (+) and commercial opportunities (+).

4.4.2 Research Question 2: National Predictors of Social Enterprise Innovation

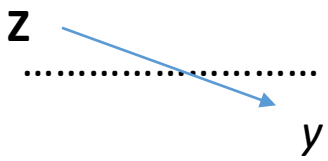
Overview:

Research question 2, and more specifically sub-questions 2.1 and 2.2, ask if there is clustering of social enterprise innovation by country. Theoretically, an answer to this question reveals if country-level factors can explain a significant amount of variation in social enterprise innovation. If so, results would lend support for national systems of innovation framework which states that institutions (i.e., culture, history, innovation capacity, S&T policies, size of the STEM workforce etc…) shape national social and economic development through firm-level innovation. Analytically, this question reveals whether or not a multilevel-modeling approach is worth conducting or if a single-level approach would suffice. I answer this research question as well as each sub-question and hypothesis in turn before summarizing the results and presenting research question 3.

Analytical Approach:

As stated previously with Research Question 1, in order to aid in the interpretation of results, as well as avoid issues of severe multicollinearity and redundancy (due to missingness) I begin by running the model with just Kerlin's institutional variables. I then run a second model in order to determine if the opportunity variables explain any additional variation in social enterprise. In both instances predictors were first treated as fixed effects as opposed to allowing the slopes to randomly vary within the model (i.e., random intercepts).

Figure 4.2: The Macro-Micro Relationship for Social Enterprise Innovation



Source: Snijders & Bosker (2012)
Note: In this figure **Z** represents the macro-institutional and opportunity variables at level-2 and **y** represents social enterprise innovation at level-1.

Research Question 2:

2. Does the size and shape of social enterprise innovation (SEI) vary by country? If so, how?

2.1 Is the size of social enterprise innovation (i.e., number of innovative SEs in the country) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

2.2 Is the shape (i.e., innovation type: process, product or marketing) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?

2.2.i. Social enterprise innovation will be highest in countries with a strong civil society sector; strong governance system, low uncertainty avoidance and collectivist values; high economic competitiveness; high innovation capacity and more international aid.

2.2.ii. There will be higher social enterprise innovation in countries with economic market strength.

2.2.iii. There will be higher social enterprise innovation in countries with more unmet social and/or environmental needs.

Social Enterprise Innovation

Assumption Testing

To examine research question 2, a mixed model ordinal logistic regression was conducted to assess if institutional variables including: economic competitiveness (GCI.Rank), welfare state, governance, civil society, uncertainty avoidance, in-group collectivism, international aid, research and development, STEM, and patents predicted the occurrence of social enterprise innovation while controlling for total population. Civil society was immediately removed from the list for the lack of available data. Social enterprise innovation is measured by the number of innovation types (product, process, and marketing). Values ranged from 0 to 3, with 0 (no types) being used as the reference category. All of the predictors were first treated as fixed effects as opposed to allowing the slopes to vary randomly within the model.

Random Intercepts: Institutions

Three innovation capacity variables (i.e., research and development, STEM, and patents) are added to this model, in addition to the variables in research question 1 (i.e., Kerlin's institutional variables). Again, multicollinearity among the predictors was reassessed. VIFs ranged from 1.72 to 51.00. Problematic variables included: governance (51.00), economic competitiveness (42.51), in-group collectivism (21.77), and STEM (21.32). These variables were removed and VIFs were recalculated. Now VIF values ranged only from 1.54 to 3.87. Thus welfare state, uncertainty avoidance, international aid, research and development, and patents were used as the main predictors of social enterprise innovation while controlling for the total population of the country.

Comparing Slopes

In order to test whether the model should be run as an ordinal logistic regression or a multinomial logistic regression, several binary logistic regressions were conducted. This was done to compare the slopes of the predictors to assess if they are parallel across each level in the dependent variable. This is important, because if the slopes were not parallel we would not be able to accurately compare the relationship between institutions and opportunities across innovation types. One binary logistic regression assessed zero innovations against one innovation type (either product, process or marketing). The second regression assessed zero innovations against one or two innovation types. The third regression assessed zero against one, two, or three innovation types. Table 4.19 presents the results of all three mixed model binary logistic regressions.

Table 4.19: Research Question 2: Comparing Mixed Model Binary Logistic Regressions to Assess for Parallel Slopes (Institutions)

Source	One type vs. zero *B*	One or two types vs. zero *B*	One, two, or three types vs. zero *B*
Intercept	-0.19	0.54**	1.00**
Welfare State (GMC)	0.28**	0.21*	0.16*
Uncertainty (GMC)	1.35**	0.94**	0.61*
(log) International aid (GMC)	0.05	0.04	-0.03
Research and Development (GMC)	0.01	-0.04	-0.25
Patents (GMC)	0.00	0.00	0.00
(log) Total population (GMC)	0.02	-0.02	-0.13

Note. * $p < .05$. ** $p < .01$.

The results show similar outcomes for all of the significant slopes. Therefore, the dependent variable for the analysis was treated as ordinal and a mixed model ordinal logistic regression was conducted.

Empty model

Results of the empty model showed a significant estimate of 0.44 ($z = 2.44$, $p = .015$) for the variation in the intercept by country. This suggests that 11.8% (0.44 / 0.44 + 3.29) of the variation in social enterprise innovation is accounted for by nesting of organizations by country. With a significant amount of variation explained, the fixed effects (i.e., institutional predictors: Kerlin's macro-institutional factors and innovation capacity variables) were entered into the model.

In this model, 34 total countries were retained. However, because I am interested in social enterprise innovation, conventional businesses are not included in the analyses. As a result, 1,033 social enterprises with valid innovation responses were analyzed. Results of the fixed effects model (i.e., welfare state, uncertainty avoidance, international aid, research and development and patents) showed an estimate of 0.34 ($z = 1.57$, $p = .116$) for the variance in the random intercept of the model. The p-value was greater than .05, suggesting that there was not a significant portion of the variance in social enterprise innovation that could be accounted for by country differences. Furthermore, this suggests that there is not a significant effect on social enterprise innovation when the fixed effects were included in the model (i.e., the relationship between the predictors and social enterprise innovation is not significant). Since none of the fixed effects in this model were significant, no additional binomial logistic regressions were conducted to predict presence of the individual innovation types (product, process, and marketing). Because none of the fixed effects in the model are significant, the answer to research question 2.1 is: no, the size or occurrence of social enterprise innovation does not vary by country.

To further explain this result, although the empty model indicated that social enterprise innovation does vary by country (11.8%), none of Kerlin's country-level predictors nor the innovation capacity variables (i.e., research and development and patents) could explain any additional variation once the fixed effects (predictors) were added into the model. Results of the model are presented in Table 4.20.

Table 4.20: Research Question 2: Reduced Model with Institutional Variables Predicting Social Enterprise Innovation

Source	*B*	*p*	*OR*
Threshold (three, two, or one)	-1.11	< .001	0.33
Threshold (two or one)	0.03	.843	1.03
Threshold (only one)	1.10	< .001	2.99
Welfare State (GMC)	-0.04	.577	0.96
Uncertainty (GMC)	0.05	.902	1.05
(log) International Aid (GMC)	0.10	.483	1.10
Research and development (GMC)	0.50	.072	1.65
Patents (GMC)	0.00	.411	1.00
(log) Total population (GMC)	0.19	.098	1.21

Probability of Social Enterprise Innovation

Nevertheless, the model showed significance at thresholds one ($p = .001$), and three ($p < .001$) innovation types. The threshold for three (0.33) suggests that overall, but independent of any clustering effects, the probability for a social enterprise having one, two or three innovation types is 24.8% (0.33 / 0.33 + 1.00) and that the probability of having only one innovation type is 74.9% (2.99 / 2.99 + 1.00) as opposed to not being innovative at all. What this means is that the probability of a social enterprises being innovative is very high.

Random Intercepts: Opportunities

Next, a second mixed model ordinal logistic regression was conducted to assess if opportunities (social, environmental, commercial and income inequality), predicted social enterprise innovation while controlling for total population. Again, social enterprise innovation diversity is measured by the number of innovation types (product, process, and marketing). Values ranged from 0 to 3, with 0 (no types) as the reference category.

All of the predictors were first treated as fixed effects as opposed allowing the slopes to randomly vary within the model.

Comparing Slopes

In order to test whether the model should be run as an ordinal or a multinomial (i.e., treating the dependent variable as nominal instead of ordinal) logistic regression, several binary logistic regressions were run. This was done to compare the slopes of the predictors to assess if they are parallel across each level in the dependent variable. One binary logistic regression assessed zero innovation types against one innovation type. The second regression assessed zero types against one or two innovation types. The third regression assessed zero types against one, two, or three innovation types. Table 4.21 presents the results of all three mixed model binary logistic regressions.

Table 4.21: Research Question 2: Comparing Mixed Model Binary Logistic Regressions to Assess for Parallel Slopes (Opportunities)

Source	One type vs. zero *B*	One or two types vs. zero *B*	One, two, or three types vs. zero *B*
Intercept	-0.45*	0.50*	1.11**
Human development (GMC)	6.82	2.85	2.35
Environmental opp. (GMC)	-0.06	-0.02	-0.03
Commercial opp. (GMC)	0.00	0.00	0.00
Income inequality (GMC)	-0.01	0.01	0.03
(log) Total population (GMC)	-0.12	-0.04	-0.10

Note. * $p < .05$. ** $p < .01$.

The results show similar regression weights for all of the slopes. Therefore, the dependent variable for the analysis was treated as ordinal and a mixed model ordinal logistic regression was conducted. The null empty model was conducted previously and the intercept was determined to be significant.

In this model, 30 total countries were retained. Values for several social enterprises were dropped due to country-level missingness among opportunity variables, such that only 369 social enterprises were retained with valid innovation data. Results of the model showed an estimate of 0.56 ($z = 1.65$, $p = .099$) for the variance in the random intercept of the model. This suggests that a significant amount of the variance in organization type cannot be accounted for by country differences.

Probability of Social Enterprise Innovation

The resulting model showed significance of the thresholds of one ($p = .002$), and three ($p < .001$) innovation diversity types. No other fixed effects in the model were significant. Since no fixed effects were significant in the model, no additional binomial logistic regressions were conducted to predict presence of the three innovation types (product, process, and marketing). Again in an empty model, social enterprise innovation does vary by country. However, when the fixed effects were added, social enterprise innovation no longer varies by country. Although income inequality was nearly significant (p = .051) none of the predictors in this model (i.e., opportunity variables) significantly predict social enterprise innovation. Results of the reduced model are presented in Table 4.22.

Table 4.22: Research Question 2: Opportunity Variables Predicting Social Enterprise Innovation

Source	*B*	*p*	*OR*
Threshold (three, two, or one)	-0.83	.002	0.44
Threshold (two or one)	0.28	.171	1.32
Threshold (only one)	1.26	< .001	3.52
Human development (GMC)	-1.72	.618	0.18
Environmental opp. (GMC)	0.02	.552	1.02
Commercial opp. (GMC)	0.00	.892	1.00
Income inequality (GMC)	-0.05	.051	0.95
(log) Total population (GMC)	0.12	.346	1.13

Innovation Types

In order to answer research question 2.2 three additional mixed model binary logistic regressions were conducted to assess if welfare state, governance, uncertainty avoidance, international aid, research and development, STEM, and patents predicted the type of innovation (product, process, and market). In the models, 1032 businesses from 34 countries were examined.

Empty Model

Empty models were run first to assess the amount of variance in type of innovation was due to nesting the businesses by country. A non-significant amount of variance in product innovation (Estimate = 0.33, $z = 1.89$, $p = .059$) was due to nesting the businesses by country, while process innovation (Estimate = 0.24, $z = 2.02$, $p = .043$) and market innovation (Estimate = 0.46, $z = 2.59$, $p = .010$) had a significant amount of

variance explained by nesting. A total of 6.8% of the variance in process innovation was due to nesting while 12.3% of the variance in marketing innovation was due to nesting.

Random Intercepts: Institutions

Fixed effects were then added to all three models. Results showed non-significance for the variance in the intercept by country for product (Estimate = 0.38, z = 1.40, p = .160), process (Estimate = 0.13, z = 0.99, p = .321), or market innovations (Estimate = 0.22, z = 1.46, p = .144). Results of the models showed a significant intercept for product innovation (B = 0.42, p = .029, OR = 1.53), suggesting that a business in a country with an average welfare state, uncertainty, international aid, research and development, patents and population were 1.53 times more likely to have a product innovation than to not have one. The intercept was also significant for marketing innovation, B = -0.40, p = .014, OR = 0.67, suggesting that a business in a country with an average welfare state, uncertainty, international aid, research and development, patents and population were 1.49 (1 / 0.67) times more likely to not have a market innovation than to have one. Additionally, welfare state was a significant predictor of marketing innovation, B = -0.17, p = .040, OR = 0.84, suggesting that as welfare state increased, the likelihood of having a market innovation decreased. Lastly, total population was a significant predictor, B = 0.21, p = .049, OR = 1.23, suggesting that as total country population increased, the likelihood of having a marketing innovation also increased. No other significance was found among the other fixed effects in any models. Results of the models are presented in Table 4.23.

Table 4.23: Reduced Model with Institutional Variables Predicting Social Enterprise Innovation Types

	Product		Process		Marketing	
Source	*B*	*OR*	*B*	*OR*	*B*	*OR*
Intercept	0.42*	1.53*	-0.11	0.89	-0.40*	0.67*
Welfare State (GMC)	0.05	1.05	0.02	1.02	-0.17*	0.84*
Uncertainty (GMC)	0.02	1.02	0.04	1.04	-0.22	0.80
(log) International Aid (GMC)	0.11	1.12	0.06	1.06	0.03	1.04
Research and development (GMC)	0.17	1.18	0.31	1.36	0.59	1.81
Patents (GMC)	0.00	1.00	0.00	1.00	0.00	1.00
(log) Total population (GMC)	0.12	1.13	0.19	1.21	0.21*	1.23*

Random Intercepts: Opportunities

Three additional models were conducted to assess if the opportunity variables predicted the innovation types. Results showed non-significance for the variance in the intercept by country for product (Estimate = 0.38, $z = 1.40$, $p = .160$), process (Estimate = 0.13, $z = 0.99$, $p = .321$), or marketing innovations (Estimate = 0.22, $z = 1.46$, $p = .144$). Results of the models showed a significant intercept for process innovation ($B = -0.38$, $p = .040$, $OR = 0.69$), suggesting that a business in a country with an average social, environmental, and commercial opportunity, and average income inequality were 1.45 times more likely to not have a process innovation than to not have one. The intercept was also significant for marketing innovation, $B = -0.58$, $p = .014$, $OR = 0.56$, suggesting that a business in a country with an average welfare state, uncertainty, international aid, research and development, patents and population were 1.79 times more likely to not have a marketing innovation than to have one. No other significance was found among the fixed effects in any models. Results of the models are presented in Table 4.24.

Table 4.24: Research Question 2: Opportunity Variables Predicting Social Enterprise Innovation Types

	Product		Process		Marketing	
Source	*B*	*OR*	*B*	*OR*	*B*	*OR*
Intercept	0.21	1.23	-0.38*	0.69*	-0.58*	0.56*
Human development (GMC)	1.03	2.80	0.64	1.90	-1.82	0.16
Environmental opp. (GMC)	0.00	1.00	0.01	1.01	0.03	1.03
Commercial opp. (GMC)	0.00	1.00	0.00	1.00	0.00	1.00
Income inequality (GMC)	0.02	0.99	0.06	0.94	0.04	0.96
(log) Total population (GMC)	0.01	1.01	0.12	1.13	0.13	1.14

A table summarizing the results for Research Questions 2, 2.1 and 2.2 and Hypotheses 2.2.i, 2.2.ii and 2.2.iii is presented below.

Table 4.25: Research Question 2: National Predictors of Social Enterprise Innovation Results Summary

Research Question / Hypothesis	Outcome
Research question 2: Does the size and shape of social enterprise innovation (SEI) vary by country? If so, how?	Yes. Social enterprise innovation does cluster by country. More specifically, social enterprise process and marketing innovations cluster by country, while social enterprise product innovations do not.
Research question 2.1: Is the size of social enterprise innovation (i.e., number of innovative SEs in the country) explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?	No. None of Kerlin's national institutional factors, innovation capacity variables, nor the opportunity variables explained variation in the size (i.e., occurrence of) social enterprise innovation.

Table 4.25 (Continued)

Research question 2.2: Is the shape (i.e., innovation type: process, product or marketing) of social enterprise innovation explained by the set of national-level variables identified in the literature (Kerlin, 2009, 2013)?	No. None of Kerlin's national institutional factors, innovation capacity variables, nor the opportunity variables explained variation in the types of social enterprise innovation.
Hypothesis 2.2.i: Social enterprise innovation will be highest in countries with a strong civil society sector; strong governance system, low uncertainty avoidance and collectivist values; high economic competitiveness; high innovation capacity and more international aid.	Partially supported. There was a negative (-) relationship between marketing innovations and size of the welfare state in a country. That is, increased spending on public health and education led to decreases in social enterprise marketing innovations.
Hypothesis 2.2.ii: There will be higher social enterprise innovation in countries with economic market strength.	Not supported. The relationship between gross national income and social enterprise innovation was non-significant.
Hypothesis 2.2.iii: There will be higher social enterprise innovation in countries with more unmet social and/or environmental needs.	Not supported. The relationship between opportunities and social enterprise innovation was non-significant.

4.4.3 Research Question 3: Organizational Predictors of Social Enterprise Innovation

Overview:

Research question 3 asks if the probability of a social enterprise being innovative depends on the organizational characteristics of the social enterprise. The organizational characteristics that are investigated in this study include: share of the volunteer workforce, percent sales revenue and entrepreneurial motivation. Results would lend support for an investigation of cross-level interaction effects (i.e., research question 4). If

a significant relationship exists between organizational characteristics and social enterprise innovation, I can then determine if national-level factors moderate the relationship between the level-1 variables in research question 4. Next, I answer research question 3 and the hypotheses before summarizing the results.

Figure 4.3: The Micro-Micro Relationship

Source: Snijders & Bosker (2012)
Note: In this figure **x** represents organizational characteristics at level-1and **y** represents social enterprise innovation at level-1

Research Question 3:

3. Do organizational characteristics affect social enterprise innovation?

3.1 There is a positive relationship between innovation and sales revenue.

3.2 Necessity-based social enterprises will be less innovative than opportunity-based social enterprises.

3.3 There is a negative relationship between the number of volunteers and social enterprise innovation.

Assumption Testing:

To examine research question 3, I originally planned to conduct an ordinal logistic regression in order to assess if the percent of sales revenue, entrepreneurial motivation (necessity vs. opportunity-based entrepreneurship, or both), and percentage of volunteers, predicts innovation diversity (i.e., variation in the type of innovation) after controlling for organization age. I also intended to use organization size as a covariate,

however, because it was too severely skewed for transformation, I simply dropped this variable from the analysis. Social enterprise innovation diversity was measured by calculating the number of innovation types (product, process, and marketing). Values ranged from 0 to 3, with 0 (no types) being used as the reference category. All of the predictors were first treated as fixed effects within the model. The predictors were centered at their group (i.e., country) means (referred to as group within the tables) in order to examine if innovation type varied based the changes in the independent variables. Multicollinearity among these variables was reassessed. VIFs ranged from 1.00 to 1.02, indicating no multicollinearity issues among level-1 predictors. Therefore all of the predictors were incorporated into the model.

Once all three regressions were run however (product, process and marketing innovation as the dependent variable), just 19 businesses had data for all organizational-level predictors: entrepreneurial motivation (necessity vs. opportunity-based entrepreneurship), percent sales revenue and number of volunteers. The variable with the most missingness was entrepreneurial motivation, and therefore this variable was dropped from the models. A total of 600 businesses were retained and I continued with the analysis. A test of parallel lines was conducted in SPSS 21 to assess if the slopes (i.e., one vs. one and two vs. one, two, and three) were similar across innovation categories. Results of the test for parallel lines was not significant, χ^2 (6) = 5.10, p = .531, suggesting that the slopes were not significantly different from each other. Therefore, I could justifiably run the model as an ordinal logistic regression.

Running the Ordinal Logistic Regression

Results of the model showed significance for percent sales revenue, B = -0.01, p = .002, OR = 0.99, suggesting that as sales increased, the likelihood of having more innovation types tended to decrease. Results also showed that as volunteers increased (B = -0.01, p = .002, OR = 0.99), the likelihood of having more innovation types tended to

decrease. Lastly, as organization age increased (B = -0.07, p = .031, OR = 0.93, the likelihood of having more innovation types tended to decrease. Results of the ordinal regression are presented in Table 4.26.

Table 4.26: Research Question 3: Ordinal Logistic Regression with Organizational Characteristics Predicting Innovation Diversity

Source	*B*	*p*	*OR*
Threshold (zero)	-0.93	< .001	0.39
Threshold (only one)	0.11	.202	1.12
Threshold (one or two)	1.22	< .001	3.39
Sales (Group)	-0.01	.002	0.99
Volunteers (Group)	-0.01	< .001	0.99
(square root) Organization Age (Group)	-0.07	.031	0.93

Running Binary Logistic Regressions for the Individual Innovation Types

Three additional binary logistic regressions were conducted to assess if sales revenue, volunteers, and organization age predicted each innovation type. Results showed that sales revenue was significantly negatively related to process (B = -0.01, p = .005, OR = 0.99) and marketing innovations (B = -0.01, p = .037, OR = 0.99) suggesting that as sales increased, the likelihood of being a process and market innovation decreased. Percent of volunteers was also negatively related to process (B = -0.01, p < .001, OR = 0.99) and process (B = -0.01, p < .001, OR = 0.99) innovation, suggesting that as the number of volunteers increased, the likelihood of a social enterprise engaging in product or process innovation decreased. Lastly, organization age was negatively related to product (B = -0.10, p = .008, OR = 0.90) and process (B = -0.10, p = .005, OR = 0.91)

innovation, suggesting that as the organization size increased, the likelihood of being a product or process innovation decreased.

Because sales revenue was a significant predictor of social enterprise innovation, the answer to research question 3 is yes, organizational characteristics do affect social enterprise innovation. Hypotheses 3.1 however, could not be supported be assessed as entrepreneurial motivation (motivate) had to be removed from the model. Lastly, research question 3.3 was supported as there was a significantly negative relationship between volunteers and social enterprise innovation, for product and process innovations in particular. Results of the regressions are presented in Table 4.27.

Table 4.27: Research Question 3: Binary Logistic Regression with Organizational Characteristics Predicting Each Individual Innovation Type

	Product		Process		Marketing	
Source	*B*	*OR*	*B*	*OR*	*B*	*OR*
Intercept	-0.60**	0.55**	-0.11	0.90	0.32**	1.39**
Sales (Group)	0.00	1.00	-0.01**	0.99**	-0.01*	0.99*
Volunteers (Group) (square root)	-0.01**	0.99**	-0.01**	0.99**	0.00	1.00
Organization Age (Group)	-0.10**	0.90**	-0.10**	0.91**	0.01	1.01

Note. * $p < .05$. ** $p < .01$

Results Summary: Research Question 3

A table summarizing the results for Research Questions 3 and Hypotheses 3.1, 3.2 and 3.3 is presented below.

Table 4.28: Research Question 3: Organizational Predictors of Social Enterprise Innovation Results Summary

Research Question / Hypotheses	Outcome
Research question 3. Do organizational characteristics affect social enterprise innovation?	Yes. Percent revenue from sales (-), percentage of volunteers (-) and organization age (-) were significant predictors of the level of innovation within a social enterprise.
Hypothesis 3.1: There is a positive relationship between innovation and revenue from sales.	Not supported. Sales revenue (-) was a significant predictor of social enterprise innovation (process innovation and marketing innovations); however, this relationship was negative.
Hypothesis 3.2: Necessity-based social enterprises will be less innovative than opportunity-based social enterprises.	Unable to determine. Entrepreneurial motivation was dropped from the model due to missingness.
Hypothesis 3.3: There is a negative relationship between the number of volunteers and social enterprise innovation.	Supported. Volunteers (-) was a significant predictor of social enterprise innovation including product innovation and process innovation

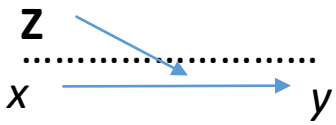
4.4.4 Research Question 4: Organizational and National Predictors of Social Enterprise Innovation Combined

Overview:

This final research question and set of hypotheses, examine if national-level factors moderate the relationship between organizational-level characteristics and social enterprise innovation, identified earlier in research question 3. Research question 4 is answered via a series of random slope models (i.e., where each country-level predictor is added into the model one by one and examined for significance). The two hypotheses require cross-level interaction analyses (see Figure 4.4) Hypotheses 4.1 investigates if the

relationship between x (percent revenue from sales) and y (social enterprise innovation) is dependent on Z (the market strength of the country). Finally hypothesis 4.2 investigates the relationship between entrepreneurial motivation (x) and social enterprise innovation (y), and determines whether or not this relationship is dependent on economy type (Z) (i.e., factor-driven, efficiency-driven or innovation-driven economy).

Figure 4.4: The Cross-Level Interaction



Source: Snijders & Bosker (2012)
Note: In this figure **Z** represents the macro-institutional and opportunity variables at level-2, **x** represents organizational characteristics at level-1and **y** represents social enterprise innovation at level-1.

Research Question 4:

4. Is the relationship between organizational characteristics and social enterprise innovation the same across countries with different national factors?

4.1 There is a positive relationship between innovation and revenue from sales and this relationship will increase with the market strength of the country.

4.2 Necessity-based social enterprises will be less innovative than opportunity-based social enterprises and this relationship will be strengthened in factor-driven economies.

Research Question 4: Randomly Varying Slopes across Countries

<u>Assumption Testing</u>

In order to examine research question 4, a series of mixed model ordinal logistic regressions were conducted to determine if the relationship between organizational characteristics and social enterprise innovation varied across countries. First, multicollinearity was assessed among the independent variables (i.e., entrepreneurial motivation, sales revenue, volunteers and organization age). Although entrepreneurial motivation was required to assess research question 4 and 4.2, there were simply not enough social enterprises (n=18) or countries (n=9) used in the model to justify keeping it; therefore, entrepreneurial motivation was removed from the model[36]. Organization size was also supposed to be used as a covariate, however, due to organization size being too severely skewed for transformation, it was left out of the analysis as well. VIFs of the remaining independent variables ranged from 1.00 to 1.02, indicating that multicollinearity was not an issue. The dependent variable, social enterprise innovation, was measured by calculating the number of innovation types (product, process, and marketing). Values ranged from 0 to 3, with 0 (no innovation) being used as the reference category. All of the predictors were first treated as fixed effects within the model. The predictors were centered at their group means (referred to as group within the tables) to examine how the probability of an innovation type varied based on the changes in the independent variables.

Comparing Slopes

In order to test whether the model should be run as an ordinal logistic regression or a multinomial logistic regression, several binary logistic regressions were run. This is done to compare the slopes of the predictors and to assess if they are parallel across each level in the dependent variable. One binary logistic regression assessed zero types

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[36] Because entrepreneurial motivation was removed, research question 4.2 could not be assessed.

against one type. The second regression assessed zero types against one or two types. The third regression assessed zero types against one, two, or three types. Table 4.29 presents the results of all three mixed model binary logistic regressions.

Table 4.29: Research Question 4: Comparing Mixed Model Binary Logistic Regressions to Assess for Parallel Slopes

Source	One type vs. zero *B*	One or two types vs. zero *B*	One, two, or three types vs. zero *B*
Intercept	0.10	-0.65**	-1.14**
Sales (Group)	0.00	0.00*	0.01**
Volunteers (Group)	0.00	0.00**	0.01**
(square root) Organization Age (Group)	0.03	0.05	0.06*

Note. * $p < .05$. ** $p < .01$.

Running the Mixed Model Ordinal Logistic Regression

The results show similar outcomes for all of the slopes. Therefore, the dependent variable for the analysis was treated as ordinal and a mixed model ordinal logistic regression was conducted. As stated previously, results of the empty model showed a significant estimate of 0.44 ($z = 2.44$, $p = .015$) for the variation in the intercept by country. This suggests that 11.8% (0.44 / 0.44 + 3.29) of the variation in social enterprise innovation is accounted for by nesting organizations by country. With a significant amount of variation explained, the fixed effects (i.e., predictors) were entered into the model.

In this model, 28 total countries and 600 social enterprises were retained for analysis. Results of the model showed an estimate of 0.63 ($z = 1.88$, $p = .060$) for the variance in the random intercept of the model. Because the p-value was greater than .05,

this result suggests that a significant amount of the variance in social enterprise innovation can no longer be accounted for by country differences. Nevertheless, the resulting model showed significance for the thresholds of one ($p < .001$) and three ($p < .001$) diversity types, as well as sales ($p < .001$), volunteers ($p < .001$) and organization age ($p < .001$).[37]

Although the effect of nesting social enterprise innovation by country was non-significant, it approached significance ($p < .06$) and as a result may have exerted enough influence on social enterprise innovation, to have produced a more informative model. This nested model produced significant positive slope coefficients (see Table 4.29) as opposed to significant negative slopes found in the previous non-nested model (i.e. Research question 3: Table 4.26)

The thresholds suggest that with an average sales, volunteers, and organization age, the probability for having one, two or three innovation types is 28.1% (0.39 / 0.39 + 1.00) and that the probability of having only one innovation type is 78.6% (3.67 / 3.67 + 1.00). Significance for sales revenue (*OR* = 1.01) suggests that as sales increases relative to the country's average, the likelihood of having more social enterprise innovation increases. Significance for percentage of volunteers (*OR* = 1.01) suggests that as the volunteers increases relative to the country's average, the likelihood of having more social enterprise innovation increases. Lastly, the older an organization is (*OR* = 1.06), the likelihood of having more social enterprise innovation also increases. Results are presented in Table 4.30.

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[37] The reason why we can examine these thresholds despite the fact that the effect of clustering was non-significant, is because thresholds represent the likelihood of a social enterprise producing one; one or two; one, two or three innovation types taking into account the effect of nesting.

Table 4.30: Research Question 4: Mixed Model Ordinal Logistic Regression with Organizational Characteristics Predicting Innovation Diversity

Source	*B*	*p*	*OR*
Threshold (three, two, or one)	-0.95	< .001	0.39
Threshold (two or one)	0.22	.294	1.24
Threshold (only one)	1.30	< .001	3.67
Sales (Group)	0.01	< .001	1.01
Volunteers (Group)	0.01	< .001	1.01
(square root) Organization Age (Group)	0.06	< .001	1.06

Investigating Binary Logistic Regressions for Innovation Types

Sales revenue, volunteers and organization age predicted innovation diversity (i.e., the number of different types of social enterprise innovation) as a result, the individual innovation types (product, process, and marketing) were examined separately. Investigating the relationship between these organization characteristics and innovation type is useful here, because I want to know if the slopes' change in direction for innovation diversity also exists for each individual innovation type. Results of the mixed model binary logistic regressions showed similar significance and slopes for product and process, but slightly different significance for marketing. While some of the coefficients and odds ratios are either 0.00 or 1.00, respectively, this is due to rounding error and therefore, they are estimated as positive numbers. Significance showed that as sales, volunteers and organization age increased (by country), the likelihood of having a product or process innovation also tended to increase. Organization age did not predict social enterprise marketing innovation. However, a business with average sales, volunteers, and organization size (relative to their country) is 1.69 (1 / 0.59) times more

likely to *not* be a social enterprise with a marketing innovation. Again, in many cases the positive direction of these slope coefficients are opposite those found previously for research question 3 (see Table 4.27.) Results of the three mixed model binary logistic regressions are presented in Table 4.31.

Table 4.31: Research Question 4: Mixed Model Binary Logistic Regression with Organizational Characteristics Predicting Individual Innovation Types

	Product		Process		Marketing	
Source	*B*	*OR*	*B*	*OR*	*B*	*OR*
Intercept	0.38	1.46	-0.11	0.90	-0.53*	0.59*
Sales (Group)	0.00*	1.00*	0.01**	1.01**	0.01*	1.01**
Volunteers (Group)	0.01**	1.01**	0.01**	1.01**	0.00*	1.00**
(square root) Organization Age (Group)	0.10**	1.11**	0.10**	1.10**	-0.01	0.99

Note. * $p < .05$. ** $p < .01$

Randomly Varying Slopes for the Ordinal Logistic Model

Random slopes were added into the ordinal logistic model one variable at a time to determine if significance was found to randomly vary the slope. Percentage revenue from sales was incorporated first. The estimate for the variance in allowing the slope for percentage revenue from sales was redundant and fixed to zero. As a result, percent sales revenue was removed as a randomly varying coefficient. Percentage of volunteers was added to the model next. The estimate for the variance in allowing the slope for percentage of volunteers had an estimate of 0.00 and $z = 0.46$, $p = .645$. As a result, percentage of volunteers was removed as a randomly varying coefficient. Lastly, organization age was added into the model, the slope for organization age was also redundant and fixed to zero. Therefore, neither percent sales revenue, nor percentage of

volunteers, nor organization age returned a significant effect of randomly varying the slopes across countries (i.e., their relationship with social enterprise innovation was the same across countries).

Hypothesis 4.1: Moderating the Level-1 Relationship by Market Strength

To examine hypothesis 4.1, a series of mixed model binary logistic regressions were conducted to assess if market strength moderated the relationship between sales revenue and innovation type. Because there was a significant relationship between percentage revenue from sales and the three innovation types (product, process, and marketing) (see Table 4.31), a cross-level interaction between sales (level-1) and market strength (GNI) (level-2) was assessed as a predictor of all three models. In these models, only revenue from sales, market strength, and their interaction was assessed. The cross-level interaction will assess if the relationship between sales and process innovation changes with different levels of commercial market strength. The results of the model showed a significant interaction between market strength and sales in predicting product innovation. However, upon further examination of the odds ratio and coefficient, values were 1.00 and 0.00 respectively, and thus this moderation could not be interpreted. That is, while market strength of the country had an impact on the relationship between sales and product innovation, the actual effect of the moderation could not be determined. Thus, hypothesis 4.1 is partially supported. Results of the model are presented in Table 4.32.

Table 4.32: Research Question 4: Mixed Model Binary Logistic Regression Assessing for Moderation of Sales and Product, Process and Marketing Innovation

	Product		Process		Marketing	
Source	*B*	*OR*	*B*	*OR*	*B*	*OR*
Intercept	-0.21	0.81	0.25	1.29	0.54**	1.71**
Sales (Group)	-0.01*	0.99*	-0.01*	0.99*	-0.01	1.00
GNI (GMC)	0.00	1.00	0.00	1.00	0.00	1.00
Sales*GNI (Interaction)	0.00**	1.00**	0.00	1.00	0.00	1.00

Results Summary: Research Question 4

The following table illustrates support or non-support for research question 4 and hypotheses 4.1, 4.2 are presented below.

Table 4.33: Research Question 4: Organizational and National Predictors of Social Enterprise Innovation Results Summary

Research Question / Hypothesis	Outcome
Research Question 4: Is the relationship between organizational characteristics and social enterprise innovation the same across countries with different national factors?	Yes. The relationship between organizational characteristics and social enterprise innovation is the same across countries.
Hypothesis 4.1: There is a positive relationship between innovation and revenue from sales and this relationship will increase with the market strength of the country.	Partially supported. There is a relationship between market strength and social enterprise innovation but the effect could not be determined.
Hypothesis 4.2: Necessity-based social enterprises will be less innovative than opportunity-based social enterprises and this relationship will be strengthened in factor-driven economies.	Unable to determine. Entrepreneurial motivation was dropped from the model due to missingness.

CHAPTER 5

CONCLUSION AND POLICY IMPLICATIONS

5.1 Introduction

The overall objective of this research was to understand national patterns of social enterprise and social enterprise innovation considering both country-level and organizational-level characteristics. The aims of this study were two fold. The first aim was to determine if the macro-institutional variables identified in Kerlin (2009, 2013) could indeed predict social enterprise and social enterprise innovation in a given country. Kerlin used qualitative case based evidence to develop the comparative social enterprise framework. This study expanded on this framework, by examining if the proposed relationships hold when examined quantitatively. I gathered macro-institutional data from a variety of global data collection agencies identified in Kerlin (2009, 2013). I then combined these data with data on opportunities and innovation capacity to conduct a larger investigation into whether social enterprise characteristics (i.e., size and shape) co-vary and to determine which organizational-level and national-level factors matter for the size and shape of social enterprise innovation. In all, data were collected on 54 countries representing seven world regions.

This study focused on four primary research questions. First, does size and shape social enterprise vary by country? If so how? Second, does the size and shape of social enterprise innovation vary by country? If so how? Third, how do organizational characteristics shape social enterprise innovation? Finally, is the relationship between organizational characteristics and social enterprise innovation the same across countries with different national factors? The vast majority of the literature on social enterprise does not account for the impact that national institutional context has on the characteristics of social enterprise organizational form. Similarly, the national systems of

innovation literature has not given serious attention to social and/or non-technological innovation and its role in economic and/or social development. This study fills these gaps by empirically testing a novel social enterprise framework and extending it to include social enterprise innovation using advanced analytical techniques in multilevel modeling. I constructed a two-level dataset with country-level variables at level-2 and organizational variables at level-1. I then conducted logistic and ordinal logistic hierarchical linear modeling to answer the research questions related to the size and shape of social enterprise.

The second aim of this study was to extend Kerlin's framework to include social enterprise innovation (see Figure 2). In order to accomplish this, I drew on the National Systems of Innovation (NIS) literature and the research on opportunity recognition to present several research questions and hypotheses relating to social enterprise innovation. The following sections pull together the findings and conclusions to formulate broad theoretical and policy implications. Findings are restated in brief, based on the empirical results, and then discussed in light of theoretical and policy implications. The final section of this chapter addresses research limitations and suggests avenues of future research as well as policy implications.

5.2 Summary of findings

Overall, the results of this study confirmed two key theoretical assumptions. First, that social enterprise is indeed very rare and second, social enterprise researchers cannot afford to ignore the impact of country-level contextual effects on organizational form.

Research Question 1.1: The Size of Social Enterprise

To answer the first set of research questions and hypotheses I ran an empty model to assess how much variance in organization type is due to nesting the businesses by

country. Results showed that 46.7% of the variance in organization type could be accounted for by individual countries, answering research question 1 in the affirmative. Nearly half of the variability is attributed to countries. That is, the chances of an organization being a social enterprise is more similar within countries than an independence model (i.e., one that does not account for clustering) would otherwise assume.

Next, I analyzed the relationship between Kerlin's macro-institutional variables (i.e., economic competitiveness, welfare state, governance, civil society, uncertainty avoidance, in-group collectivism and international aid) and social enterprise controlling for total population. This study defines social enterprise as an existing organization with a particularly social, environmental or community objective that earns revenue from sales. Initially, all predictors were treated as fixed effects. After removing problematic variables (i.e., civil society), the model showed that the intercept, as well as economic competitiveness, and welfare state were positively related to organization type. Specifically, this finding suggests that an organization located in a country with average macro-institutional characteristics the odds of being a social enterprise is 50 times more likely not to be a social enterprise than a social enterprise. Furthermore, the less economically competitive a country and the larger the welfare state, the more likely the organization is to be a social enterprise.

In-group collectivism was also positively related to social enterprise. For every one unit increase in in-group collectivism, organizations are four times less likely to be social enterprise. This finding would suggest, that like the human development variable (discussed below), social enterprises might have a collectivist orientation at a micro-level (i.e., concern for other's welfare) but at the macro-scale, it is individualism, not collectivism that does supports the social enterprise sector of a country.

In addition to testing Kerlin's institutional variables I explored the relationship between social, environmental and/or commercial opportunities on organization type.

The intercept and social opportunities were both significant predictors of social enterprise. This suggests that an organization located in a country with average social, environmental and commercial opportunities fifty times more likely not to be a social enterprise. Social opportunity however was a positive predictor of social enterprise suggesting that for every one unit increase in social development (i.e., improved living standards, a long and healthy life and average years of education) the likelihood of an organization being a social enterprise increases by 24.8. This result strongly supports the idea that social enterprise organizations are significantly more likely in countries with fewer social needs, supporting the finding that social enterprise is a privileged activity (Bosma & Levie, 2010).

Research Question 1.2: The Shape of Social Enterprise

I also investigated the shape of social enterprise (i.e., percent revenue from sales and national variation in areas of impact). While I was unable to explain how much of the variation in the shape of social enterprise could be explained by national-level factors, I was able to determine which relationships were significantly correlated with diversity of areas of impact. The results showed that economic competitiveness, uncertainty avoidance and in-group collectivism were all negatively correlated with diversity. That is, social enterprises operated in fewer sectors (i.e., less diversity) in less economically competitive, more collectivist or more risk averse countries. On the other hand, social enterprises operated in more sectors (i.e., greater diversity) in countries with a large welfare state, strong system of governance, fewer social needs or large commercial markets.

These findings lend mixed support to Kerlin's models of social enterprise. In Kerlin's CSE framework, social enterprises in Dependent Focused and Enmeshed Focused countries are less diverse in their areas if impact because of the combination of a large welfare state and supportive government. These conditions then contribute to social

enterprise organizations operating in a "narrow sphere of services popularized and supported by the state" (Kerlin, 2013, p. 95). If this statement were supported we would see an inverse relationship between diversity of areas of impact and the size of the state. Instead, I find the opposite. On the other hand, Kerlin claims that social enterprises are more diverse in Autonomous Diverse countries (i.e., United States, United Kingdom) due to their relative autonomy from the state due in large part to the innovation-driven nature of their economy that encourages innovation, entrepreneurship and individual philanthropic efforts (i.e., those not constrained by the state's interests). In support of this statement, economic competitiveness is negatively correlated with diversity (i.e., more competitive social enterprises are more diverse in their areas of impact).

Research Question 2.1: The Size of Social Enterprise Innovation

To answer the second set of research questions and hypotheses I ran an empty model to assess how much variance social enterprise innovation is due to nesting the businesses by country. Eleven percent of the variance in social enterprise innovation was due to nesting. However, as none of the predictors (institutional or innovation capacity variables) were significant, none of the size of social enterprise innovation could be explained by these factors. I next examined the relationship between opportunities and social enterprise innovation. However, a significant amount of the variance in social enterprise innovation could not be explained by nesting in this model, and none of the predictors (i.e., social development, commercial market, environmental opportunities and income inequality variables) were significant.

Research Question 2.2: The Shape of Social Enterprise Innovation

I also investigated the relationship between national institutional factors, including innovation capacity and the shape (i.e., process, product or marketing) of social enterprise innovation through a series of three separate mixed-model logistic regressions.

Results demonstrated that social enterprise process and marketing innovations had a significant amount of variation explained by nesting whereas social enterprise product innovation did not. Seemingly, this finding suggests that *how* an innovation is produced (i.e., process innovation) or delivered (i.e. delivery innovation), and *who* it is produced for or delivered to (i.e., market niche) is more heavily influenced by *where* a social enterprise is situated (i.e., national context) than *what* is produced (i.e., product innovations). However, none of the institutional factors significantly predicted a particular type of social enterprise innovation. Additional findings suggested that as the population of a country increased, social enterprises are more likely to have produced a marketing innovation. This relationship might be interpreted as saying that the more people there are in a country the more opportunities for marketing innovations to result in greater impact. Similarly, a negative relationship was found between the size of the welfare state of a country and social enterprise marketing innovations. This can be interpreted as the more welfare spending in a country the lower the reliance on social enterprise marketing innovations. This relationship is feasible if one considers the idea that social enterprise organizations in partnership with their governments, may not need to try as hard to promote their product or target particular populations as much, because widespread government programs do that work for them. Finally, in the opportunity model none of the variance for any of the innovation types (product, process, marketing) could be explained by nesting. This meant that no *additional* variation in social enterprise innovation could be explained by the opportunity variables (although income inequality came the closest to approaching significance, $p = .05$).

Research Question 3: Organizational-level relationships

In order to examine the relationship between organizational-level predictors (i.e., percent revenue from sales, entrepreneurial motivation and number of volunteers) on social enterprise innovation, I conducted an ordinal logistic regression. Results

demonstrated that percent revenue from sales and percentage of volunteers were significant negative predictors of social enterprise innovation diversity. This means that according to this model social enterprises engage in fewer types of innovation the more sales revenue and the more volunteers there have.

Research Question 4: Cross-level interactions

The final research question examined whether national-level factors moderate the significant relationships identified between organizational-level characteristics and social enterprise innovation through the analysis of Research Question 3. Results of the random slopes model demonstrated that overall the relationship between organizational-level characteristics and social enterprise innovation was the same across countries. Although, it was not the primary purpose of this research question, results of the cross-level interaction produced very interesting outcomes. Oddly enough, once country-level effects were taken into account (based on the 11.8% variance explained), the relationship between organizational characteristics (sales revenue, volunteers and organization age) and social enterprise innovation switched signs. That is, the relationship between sales revenue, volunteers and organization age with social enterprise innovation was now positive as opposed to negative. This means that social enterprises engage in more types of innovation the more sales revenue, the more volunteers and the older their organization.

These results provide strong evidence for the use of multilevel modeling as opposed to basic logistic or ordinal logistic regression on the investigation of single-level relationships. Findings also showed that while the relationship between revenue from sales and social enterprise is moderated by the market strength of the country, it is unclear whether this moderation enhances or diminishes the relationship between these two organizational level factors.

Review of Findings

In line with the goals of this study, findings demonstrate that understanding the national context of social enterprises, in terms of country-level institutions and opportunities, tells a more comprehensive story of social enterprise. Results also suggest that while innovative social enterprises do cluster in countries (i.e., country-level factors do matter), the predictors in this study do not adequately explain any additional clustering effects (with the exception of the size of the welfare state). Overall, evidence from this study suggests that a failure to recognize the role of national context can potentially undercut the validity of results involving social enterprise and social enterprise innovation.

5.3 Discussion and research contributions

Social enterprise

The dissertation was aimed at empirically investigating the impact of Kerlin's macro-institutional variables on the occurrence and key characteristics of the social enterprise organizational form using quantitative evidence from 54 countries. Findings generally support Kerlin's framework and most importantly, results show that researchers cannot afford not to account for country-level factors in studies of social enterprise. This finding is consistent with prior studies of social entrepreneurship and social enterprise that have attempted to account for country-level distinctions in their definition or formation (Defourny & Nyssens, 2012; Galera & Borzaga, 2009). This study also seems to suggest that an *inverse* supply and demand relationship exists at the macro-level between social opportunities (i.e., human development) and social enterprise. This added contribution to the CSE Framework indicates that at the macro-level, opportunities or more specifically the lack of opportunities, matter for social enterprise. This is an

important distinction. Social enterprises are more prevalent in countries with high human development scores, as opposed to countries with greater unmet social need. This supports the argument that while opportunities matter on a micro-level, it is capabilities, not opportunities that matter on the macro-scale.

Social enterprise innovation

Social enterprise innovation is a viable theoretical construct that warrants further attention in the social enterprise and social innovation literatures. Using established indicators from the National Systems of Innovation framework, to examine the impact of innovation capacity on social enterprise innovation, I've demonstrated that statistically speaking and given the current available global data on social enterprise organizations, existing S&T indicators (i.e., R&D investments and STEM workforce) are not useful predictors of social enterprise innovation. This is an important finding, which has implications for S&T policy, particularly in countries seeking to promote innovative organizations to address national social and/or environmental problems. This result may be due to the fact that social enterprise innovations, which are composed of more non-technological and non-product innovations, have traditionally fallen outside of the NIS framework scope. Additional research is needed to determine if other macro-level indicators, can serve in the same capacity as traditional S&T indicators have done for the technological innovation literature. Nevertheless, this study has demonstrated that social enterprise innovation as an extension of the social enterprise organizational form is worthy of further investigation particularly with regard to differentiating between types of innovative activity (i.e., product, process and marketing innovations).

5.4 Research limitations

This research has several limitations. As with other global comparative studies, results are safely interpreted as cross-sectional and correlational in nature, falling short of causal determinations. Likewise, although multilevel modeling techniques provide a better understanding of nested data, the method alone cannot lead directly to causal links. Harmonizing multiple data sources where data are collected using different methodological practices and in different time frames as a practice is less than ideal. In particular subjects may vary in their responses depending on the particular conditions faced by their organization or country at the time of the interview. There are also limitations with respect to the validity of responses in GEM data. The GEM data is a general population survey designed to assess individual-level characteristics of entrepreneurs. Although I intentionally restricted the data to existing owner/manager/founders of businesses (as opposed to nascent entrepreneurs) these roles were never objectively verified. This is problematic as I am interested in the organization not the individual. The inability to verify respondent roles made it difficult gauge the validity and reliability of responses regarding the organizational-level characteristics (incl. revenue from sales, volunteers, innovative activity, areas of impact, organization age and size). In the worst case, respondents were neither owners, managers nor founders of the organization and/or the organization itself was fictitious. Similarly, although the 2009 GEM dataset incorporated a new set of questions regarding social entrepreneurship and innovation, it is not designed to focus on social entrepreneurship, nor is it designed to collect organizational data. Additionally, some of the survey questions may have been misinterpreted (or mistranslated in the case of all non-English

speaking countries). This may have led to false-positive responses on survey items relating to innovation, or social purpose. Even owner/manager/founder respondents may not be as knowledgeable about organization activities, and as a result they may have provided misleading responses. These are all trade-offs, however, as owner-manager founders are the best candidates for answering questions relating to organizational mission, vision and goals and innovative behavior.

In addition to the challenges of using a self-reported survey instrument to report on organizational activity, I also faced several analytical challenges in this study. At several points, I was unable to conduct the desired analyses due to the limited number of cases with valid country and/or organizational values. On the same token, I was often unable to combine all of the variables of interest into the mixed-models for analysis. A significant set-back arose when the civil society variable had to be dropped from all subsequent analyses due to insufficient data (i.e., large missingness). In sum, parsimony was severely lacking in this study. However, given the extensive theoretical frameworks utilized, this was unavoidable as this study attempted to expand upon and validate these two rich conceptual frameworks.

Another limitation of this study is that it does not account for individual-level characteristics (i.e., the traits of the individual entrepreneur). This means that I did not account for gender, age, socio-economic status, race or ethnicity of the individual entrepreneurs. Inferring causal relationships are also problematic in this study. While strong relationships emerged between organizational characteristics (sales revenue, volunteers, organization age) and social enterprise innovation; it is unclear if social enterprise organizations with increasing sales revenue are more innovative due to their

funding mechanism, or if for example innovative social enterprises then sell those innovations to generate more revenue from sales. Likewise, the strong positive relationship between volunteers and social enterprise innovation could reflect the fact that volunteers are more willing to volunteer with innovative social enterprises, (i.e., their presence is a spill-over effect) or that social enterprises with more volunteers are actually more innovative because the volunteers themselves contribute to the pool of ideas, social capital and resources for which social enterprise rely on in order to succeed.

5.5 Future research

Finally, the current state of the literature on social innovation, and social enterprise innovation in particular, is anemic. Authors have claimed that social enterprises are inherently innovative (Chell et al., 2010; Dees, 1998; Light, 2006), but the form of these innovations and what impact they may or may not have on their stakeholders is typically left out of the explanation. This study presents some preliminary evidence that social enterprise innovation, understood as a product of the social enterprise organizational form, is an important, yet untold part of the social enterprise story. Future research should unpack the social innovation landscape to include and differentiate social enterprise innovation from the broader (and messier) social innovation literature.

Data quality was also a concern with this study. Thus one of the proposed avenues for future research is the development and implementation of a more reliable (i.e., via objective verification of organizational) cross-country comparative dataset of social enterprise and social enterprise innovation. Secondly, it lays the foundations for qualitative investigations of all forms of social innovation including social enterprise

innovation. Particularly, understanding how and why social enterprises innovate is worth exploring via in-depth qualitative studies. Third, qualitative and quantitative evidence at the macro (i.e., country) and micro (organizational) level are needed in those regions of the world in which institutional data is scarce (i.e., in Africa, the Pacific Islands or the Middle East for example). Likewise, regional-level characteristics have also been shown to significantly influence the size and shape of organizations (Feldman, 2000) and innovation (Clark, Huang, & Walsh, 2010). Researchers should also consider exploring how regional differences within countries (i.e., within-stare variation) might impact social enterprise and social enterprise innovation. In particular, identifying certain countries (based on where they fall in the models of social enterprises, or on other key variable characteristics) and pulling out examples of social enterprises at the regional level would be worthwhile for further investigation. This kind of analysis could be used to explain why social enterprises cluster in certain locations.

Additional next steps with regard to this research include unpacking the patterns that emerge with respect to how social enterprises cluster in terms of their innovations. Along these lines, additional research questions worthy of further investigation might include: In what ways do the different types of SE organizations (i.e. those that occupy the hybrid enterprise space in Alter's (2007) spectrum) vary in terms of their innovative activity? To what extent are social enterprises adopting or adapting innovations from the traditional non-profit or for-profit sectors? This question requires acknowledging that even among social enterprise models, not all social enterprises are alike and the ways that they vary within the state might also contribute to variation in impact. Similarly, understanding why welfare state is important for social enterprise and social enterprise

innovation would strengthen arguments by officials interested in stimulating innovation even in those countries with greater social and/or environmental opportunities.

5.6 Policy Implications

Social enterprise is rare (Lepoutre, Justo, Terjesen, & Bosma, 2011). National policymakers, academics and members of the international development community view SE as a potential solution to long standing societal ailments. This study realistically assesses the feasibility of SE and SEI to live up to these expectations. A government official may wish to incentivize SE and SEI; however, her expectations may be stunted due to particularities of the national context (i.e., effective governance may be positively associated with SEI in countries where there are fewer social opportunities).

Furthermore, as stated earlier, this dissertation demonstrates that existing S&T indicators are not strong predictors of social enterprise innovation. As such, national investments in R&D and expanding the STEM workforce may not be the most appropriate next steps for policy makers interested in promoting innovative organizations aimed at resolving entrenched social and environmental challenges. International development agencies (IDAs) might consider using this research to explore the relative investments in international aid and its relationships to organizational sustainability. The effects of international aid was non-significant for both social enterprise and social enterprise innovation in this study, nevertheless it is worthwhile to discuss the relative importance of this research on the international development and aid community. It is unclear if the international development funding agents are interested in equally supporting both traditional nonprofit and social enterprise agencies and practitioners. However, non-profit sustainability has been a long time emphasis of IDAs and

practitioners. By incorporating an earned-income component in to the traditional non-profit enterprise model, IDAs should pay close attention to the funding and impact behavior of these hybrid entities. The negative correlation (see research question 3) between social enterprise commercial revenue generation and innovation indicates that for social mission organizations, sales revenue may be a negative predictor of innovation, or vice versa (i.e., causal direction cannot be inferred). However, after accounting for country-level factors (see research question 4), these relationships are then switched such that the relationship between social enterprise commercial revenue generation and innovation is positive, implying that for social mission organizations, sales revenue may be a *positive* predictor of innovation, or vice versa. Statistically speaking, although accounting for country-level factors would produce a less biased estimate of the proposed relationship, understanding the relationship between revenue from sales and innovation is an important next step to understanding the capacity building and sustainability of social enterprises. This will also help social enterprises as well as funders understand when and how a social enterprise measures their own success. The assessment of impact and sustainability are two of the most important elements worthy of future exploration in the social enterprise literature, if it is going to remain an area of interest to the international development community.

Overall, the results of this study will be applicable to academics, national policymakers, entrepreneurs and the international development community. Findings will inform audiences of the national factors that matter most for social enterprise and social enterprise innovation. Policy makers should strongly consider adopting a more

pluralistic view of social enterprise, particularly when comparing social enterprises from different institutional contexts.

APPENDIX A: SOCIAL ENTERPRISE MODEL CHARACTERISTICS

Table A.1: Social Enterprise Model Characteristics

Social Enterprise Model	Variation by Area of Impact	Reliance on Commercial Revenue	Economy		Governance			Welfare State	Civil Society		Culture	
			Stage of Economic Development	GCI Score	Regulatory Quality	Rule of Law	Control of Corruption	Public Spending: Health and Education	Presence	Model	In-group collectivism (practices)	Uncertainty Avoidance (values)
Sustainable subsistence	L	H	Factor	L	L	L	L	L	M	Traditional	H	M
Autonomous Mutualism	M	H	Efficiency	M	L	L	L	M	H	Deferred Democrati-zation	H	M
Dependent Focused	L	M-L (reliant on gov't subsidies)	Innovation	H	M	M	M	M	M	Welfare Partnership	M	M-L
Autonomous Diverse	H	M (mixed with charity and gov't revenue)	Innovation	H	H	H	H	H	H	Liberal	L	L
Enmeshed Focused	L	L (very reliant on govt subsidies)	Innovation	H	H	H	H	H	L	Social Democratic	L	L

Adapted from: Kerlin (2013) Table 6. Social Enterprise (SE) Characteristics for Five Countries

APPENDIX B: 2009 GEM COUNTRIES

Table B.1: List of Countries

Middle East	Latin America & the Caribbean	Europe / North America	Asia	Africa	Oceania
[i‡]Algeria	[i]Argentina	[‡]Belgium	[i]China	[‡]Uganda	Tonga
[i]Iran	Brazil	[i‡]Bosnia & Herzegovina	[i]Hong Kong	South Africa	
[i‡]Jordan	[‡]Chile	[i‡]Croatia	Japan		
[i‡]Lebanon	Colombia	Denmark	[i]Malaysia		
Morocco	[i‡]Dominican Republic	Finland	South Korea		
[i‡]Saudi Arabia	[i]Ecuador	France			
[i‡]Syria	[i]Guatemala	Germany			
[i‡]Tunisia	[i‡]Jamaica	[i]Greece			
[i‡]United Arab Emirates	[i‡]Panama	[i]Hungary			
*[‡]West Bank & Gaza Strip	[‡]Peru	[i‡]Iceland			
*[i‡]Yemen	[i‡]Uruguay	Ireland			
	[i‡]Venezuela	Israel			
		Italy			
		[i‡]Latvia			
		Netherlands			
		[‡]Norway			
		[‡]Romania			
		Russia			
		[i‡]Serbia			
		[i]Slovenia			
		Spain			
		Switzerland			
		United Kingdom			
		United States			

Note: Missing values for key variables: *Global Competitiveness Index; [i]Civil Society Models, [‡]GLOBE Culture

APPENDIX C: VARIABLE OPERATIONALIZATIONS

Table C.1: Variable Operationalizations

Construct	Operationalized Definition	Variable/Scale of Measurement/Values	Data Source
Organizational level variables			
Social enterprise	An existing organization with an explicit social, environmental or community objective with sales revenue.	*OrgType*: categorical variable coded 0 for conventional business; 1 for Social organization (without sales revenue) and 2 for social enterprise	2009 GEM APS
Innovation	An organization which offers any of the following: a new type of product or service (i.e., product innovation); a new way of producing a product or service or a new way of delivering a product or service (i.e., process innovation); a new way of promoting or marketing a product or service; OR is attending a new or so far unattended market niche or customer.	*Innov*: Dummy variable coded 1 if innovative	
		Osloprod: Dummy variable coded 1 if a new product or service innovation. *Osloproc:* Dummy variable coded 1 if a new process or delivery method. *Oslomark:* Dummy variable coded 1 if a new promotional method or market niche.	
		Oslo3: Categorical variable coded 1, 2 or 3 if one, two or three new innovation types respectively.	
Entrepreneurial motivation	The owner-manager's reason for involvement in the firm.	*Motivate:* Categorical Variable coded 0 for necessity-driven; 1 for opportunity-driven; and 2 for a combination of both.	
Organization Age	Number of years since the activity, organization or initiative provided services to others, or received external funding.	*OrgAge:* Continuous: coded -1 if no funding received or services provided yet; valid values range from 0-909 years.	

Organization Size	Total number of workers (full-time, part-time, volunteers or subcontractors) not including the owners that are working for this activity, organization or initiative.	*OrgSize:* Continuous	
Impact	Product or service areas of impact	*Impact:* Categorical: coded 1 for Culture and recreation; 2 for Education and research; 3 for Health; 4 for Social sector; 5 for Environment; 6 for Development and housing; 7 for Law, advocacy and politics, 8 for Philanthropic intermediaries and voluntarism promotion; 9 for International activities; 10 for Religious congregations and associations; 11 for business and professional associations and 12 for other.	
		Impact diversity: Ordinal: Proportion of social enterprise impact areas by country. Coded 0 for don't know or unable to determine, and 1 to 12 for each area of impact.	
Country-Level Institutional Variables			
Welfare state	Proxy for the size of government welfare	*PubEd*: Public expenditure on education as a percent of GDP.[38]	WDI (2008)
		PubHlth: Percent expenditure on public health as a percent of GDP	
Civil society	Models of Civil Society	*CivSoc:* Categorical Variable coded 0 for Liberal; 1 for Liberal-Borderline; 2 for	Salamon & Sokolowski

[38] The most recent values available for Ecuador and Tonga were from 2005 and 2000 respectively.

		Welfare Partnership; 3 for Welfare Partnership-Borderline; 4 for Social Democratic; 5 for Social Democratic-Borderline; 6 for Deferred Democratization; 7 for Deferred Democratization-Borderline; 8 for Traditional and 9 for Traditional-Borderline.	(2010); Data collected varied by year and were normalized to year 2005 where applicable. (See Salamon, 2010 for more information)
Economy	Stages of economic development	*GCI.Type*: Categorical variable coded 1 for Factor-Driven Economy (Stage 1); 2 for Transition from Stage 1 to Stage 2; 3 for Efficiency-Driven Economy (Stage 2); 4 for Transition from Stage 2 to Stage 3 and 5 for Innovation-Driven Economy (Stage 3)	GCI
	Economic competitiveness scores	*GCI.Rank:* Rank ordered variable coded. 1 for the most competitive country through and 131 for the least competitive country	
Governance	Effectiveness: Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	*WGI.Eff:* Rank ordered variable: Values can from -2.5 to 2.5. Negative values reflect low perceived quality and positive values high perceived quality in government effectiveness	WGI
	Regulation: Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	*WGI.Reg*: Rank ordered variable: Values can from -2.5 to 2.5. Negative values reflect low perceived quality and positive values high perceived quality in government regulatory practices.	
	Corruption: Perceptions of the extent to which public power is exercised for private	*WGI.Corr*: Rank ordered variable: Values can range from -2.5 to 2.5. Negative values	

	gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	reflect high perceived corruption and positive values low perceived government corruption.	
	Rule of Law: Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	*WGI.Law:* Rank ordered variable: Values can range from -2.5 to 2.5. Negative values reflect low perceived confidence in the rule of law.	
Culture	Uncertainty avoidance (societal values): the extent to which members of society strive to avoid uncertainty by relying on established social norms, rituals and bureaucratic practices.	*Uncertain*: Rank ordered: coded 1 through 7, The higher the number the greater uncertainty avoidance in societal values.	GLOBE
	In-group Collectivism (societal practices): The degree to which individuals express pride and loyalty, and cohesiveness in their organizations or families.	*Ingrp*: Rank ordered: coded 1 through 7. The higher number the more in-group oriented the societal practices.	
International aid	Net official development assistance (ODA) per capita.	*IntlAid:* Continuous: positive values indicate aid received, negative values indicate repayment amounts.	WDI
Innovation capacity	Research and development expenditure as a percent of GDP: Current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications.	*RD:* Continuous: Percent (0-100%)	WDI
	STEM Workforce: Researchers in R&D (per million people). Researchers in R&D are professionals (including postdocs)	*STEM*: Continuous: Valid range from 0 to 5.	

	engaged in the conception or creation of new knowledge, products, processes, methods, or systems and in the management of the projects concerned.		
	Patents: Combined patent application count of residents and non-residents.	*Patent*: Continuous	
Country-Level Opportunity Variables			
Market strength / Commercial Opportunities	Gross national income (GNI) per capita: the gross national income, converted to U.S. dollars using the World Bank Atlas method, divided by the midyear population	*GNI:* Continuous	WDI
	Ease of doing business: average of the country's percentile rankings on 10 topics related to business regulation, made up of a variety of indicators, giving equal weight to each topic.	*DBI*: Rank ordered: coded 1 for the highest ease of doing business score and 175 for the lowest ease of doing business score.	DBI
Human Development / Social Opportunities	A composite index measuring average achievement in three basic dimensions of human development: a long and healthy life, knowledge and a decent standard of living.	*HumDev*: Continuous: 0-1	UNESCO
Environmental Opportunities	EPI: A composite index of indicators which comprise environmental health and ecosystem vitality.	*Envir*: Ordered: coded 1 for best environmental performance rank; 132 for lowest environmental performance rank	EPI
Income inequality	Measure of the deviation of the distribution of income (or consumption) among individuals or households within a country from a perfectly equal distribution.	*GINI:* 0-100: A value of 0 represents absolute equality, a value of 100 absolute inequality.	WDI

APPENDIX D: INTERNATIONAL CLASSIFICATION OF NONPROFIT ORGANIZATIONS (ICNPO): A DETAILED VIEW

Group 1: Culture and Recreation

1 100 Culture and arts:

Media and communications. Production and dissemination of information and communication; includes radio and TV stations; publishing of books, journals, newspapers and newsletters; film production; and libraries.

Visual arts, architecture, ceramic art. Production, dissemination and display of visual arts and architecture; includes sculpture, photographic societies, painting, drawing, design centers and architectural associations.

Performing arts. Performing arts centers, companies and associations; includes theater, dance, ballet, opera, orchestras, chorales and music ensembles.

Historical, literary and humanistic societies. Promotion and appreciation of the humanities, preservation of historical and cultural artifacts and commemoration of historical events; includes historical societies, poetry and literary societies, language associations, reading promotion, war memorials and commemorative funds and associations.

Museums. General and specialized museums covering art, history, sciences, technology and culture.

Zoos and aquariums.

1 200 Sports

Provision of amateur sport, training, physical fitness and sport competition services and events; includes fitness and wellness centers.

1 300 Other recreation and social clubs

Recreation and social clubs. Provision of recreational facilities and services to individuals and communities; includes playground associations, country clubs, men's and women's clubs, touring clubs and leisure clubs.

Service clubs. Membership organizations providing services to members and local communities, for example, Lions, Zonta International, Rotary Club and Kiwanis.

Group 2: Education and Research

2 100 Primary and secondary education

Elementary, primary and secondary education. Education at elementary, primary and secondary levels; includes pre-school organizations other than day care.

2 200 Higher education

Higher education. Higher learning, providing academic degrees; includes universities, business management schools, law schools and medical schools.

2 300 Other education

Vocational/technical schools. Technical and vocational training specifically geared towards gaining employment; includes trade schools, paralegal training and secretarial schools.

Adult/continuing education. Institutions engaged in providing education and training in addition to the formal educational system; includes schools of continuing studies, correspondence schools, night schools and sponsored literacy and reading programs.

2 400 Research

Medical research. Research in the medical field; includes research on specific diseases, disorders or medical disciplines.

Science and technology. Research in the physical and life sciences and engineering and technology.

Social sciences, policy studies. Research and analysis in the social sciences and policy area.

Group 3: Health

3 100 Hospitals and rehabilitation

Hospitals. Primarily inpatient medical care and treatment.

Rehabilitation. Inpatient health care and rehabilitative therapy to individuals suffering from physical impairments due to injury, genetic defect or disease and requiring extensive physiotherapy or similar forms of care.

3 200 Nursing homes

Nursing homes. Inpatient convalescent care and residential care, as well as primary health-care services; includes homes for the frail elderly and nursing homes for the severely handicapped.

3 300 Mental health and crisis intervention

Psychiatric hospitals. Inpatient care and treatment for the mentally ill.

Mental health treatment. Outpatient treatment for mentally ill patients; includes community mental health centers and halfway homes.

Crisis intervention. Outpatient services and counsel in acute mental health situations; includes suicide prevention and support to victims of assault and abuse.

3 400 Other health services

Public health and wellness education. Public health promotion and health education; includes sanitation screening for potential health hazards, first aid training and services and family planning services.

Health treatment, primarily outpatient. Organizations that provide primarily outpatient health services, e.g., health clinics and vaccination centers.

Rehabilitative medical services. Outpatient therapeutic care; includes nature cure centers, yoga clinics and physical therapy centers.

Emergency medical services. Services to persons in need of immediate care; includes ambulatory services and paramedical emergency care, shock/trauma programs, lifeline programs and ambulance services.

Group 4: Social services

4 100 Social services

Child welfare, child services and day care. Services to children, adoption services, child development centers, foster care; includes infant-care centers and nurseries.
Youth services and youth welfare. Services to youth; includes delinquency prevention services, teen pregnancy prevention, drop-out prevention, youth centers and clubs and job programs for youth; includes YMCA, YWCA, Boy Scouts, Girl Scouts and Big Brothers/Big Sisters.
Family services. Services to families; includes family life/parent education, single parent agencies and services and family violence shelters and services.
Services for the handicapped. Services for the handicapped; includes homes, other than nursing homes, transport facilities, recreation and other specialized services.
Services for the elderly. Organizations providing geriatric care; includes in-home services, homemaker services, transport facilities, recreation, meal programs and other services geared towards senior citizens (does not include residential nursing homes).
Self-help and other personal social services. Programs and services for self-help and personal development; includes support groups, personal counseling and credit counseling/money management services.

4 200 Emergency and relief

Disaster/emergency prevention and control. Organizations that work to prevent, predict, control and alleviate the effects of disasters, to educate or otherwise prepare individuals to cope with the effects of disasters, or to provide relief to disaster victims; includes volunteer fire departments, life boat services etc.

Temporary shelters. Organizations providing temporary shelters to the homeless; includes travelers aid and temporary housing.

Refugee assistance. Organizations providing food, clothing, shelter and services to refugees and immigrants.

4 300 Income support and maintenance

Income support and maintenance. Organizations providing cash assistance and other forms of direct services to persons unable to maintain a livelihood.

Material assistance. Organizations providing food, clothing, transport and other forms of assistance; includes food banks and clothing distribution centers.

Group 5: Environment

5 100 Environment

Pollution abatement and control. Organizations that promote clean air, clean water, reducing and preventing noise pollution, radiation control, treatment of hazardous wastes and toxic substances, solid waste management and recycling programs.

Natural resources conservation and protection. Conservation and preservation of natural resources, including land, water, energy and plant resources for the general use and enjoyment of the public.

Environmental beautification and open spaces. Botanical gardens, arboreta, horticultural programs and landscape services; organizations promoting anti-litter campaigns; programs to preserve the parks, green spaces and open spaces in urban or rural areas; and city and highway beautification programs.

5 200 Animal protection

Animal protection and welfare. Animal protection and welfare services; includes animal shelters and humane societies.

Wildlife preservation and protection. Wildlife preservation and protection; includes sanctuaries and refuges.

Veterinary services. Animal hospitals and services providing care to farm and household animals and pets.

Group 6: Development and housing

6 100 Economic, social and community development

Community and neighborhood organizations. Organizations working towards improving the quality of life within communities or neighborhoods, e.g., squatters' associations, local development organizations and poor people's cooperatives.

Economic development. Programs and services to improve economic infrastructure and capacity; includes building of infrastructure, such as roads, and financial services, such as credit and savings associations, entrepreneurial programs, technical and managerial consulting and rural development assistance.

Social development. Organizations working towards improving the institutional infrastructure and capacity to alleviate social problems and to improve general public well-being.

6 200 Housing

Housing associations. Development, construction, management, leasing, financing and rehabilitation of housing.

Housing assistance. Organizations providing housing search, legal services and related assistance.

6 300 Employment and training

Job training programs. Organizations providing and supporting apprenticeship programs, internships, on- the-job training and other training programs.

Vocational counseling and guidance. Vocational training and guidance, career counseling, testing and related services.

Vocational rehabilitation and sheltered workshops. Organizations that promote self-sufficiency and income generation through job training and employment.

Group 7: Law, advocacy and politics

7 100 Civic and advocacy organizations

Advocacy organizations. Organizations that protect the rights and promote the interests of specific groups of people, e.g., the physically handicapped, the elderly, children and women.

Civil rights associations. Organizations that work to protect or preserve individual civil liberties and human rights.

Ethnic associations. Organizations that promote the interests of or provide services to members belonging to a specific ethnic heritage.

Civic associations. Programs and services to encourage and spread civic mindedness.

7 200 Law and legal services

Legal services. Legal services, advice and assistance in dispute resolution and court-related matters.

Crime prevention and public policy. Crime prevention to promote safety and precautionary measures among citizens.

Rehabilitation of offenders. Programs and services to reintegrate offenders; includes halfway houses, probation and parole programs, prison alternatives.

Victim support. Services, counsel and advice to victims of crime.

Consumer protection associations. Protection of consumer rights and the improvement of product control and quality.

7 300 Political organizations

Political parties and organizations. Activities and services to support the placing of particular candidates into political office; includes dissemination of information, public relations and political fund-raising.

Group 8: Philanthropic intermediaries and voluntarism promotion

8 100 Grant-making foundations

Grant-making foundations. Private foundations; including corporate foundations, community foundations and independent public-law foundations.

8 200 Other philanthropic intermediaries and voluntarism promotion

Volunteerism promotion and support. Organizations that recruit, train and place volunteers and promote volunteering.

Fund-raising organizations. Federated, collective fund-raising organizations, includes lotteries.

Group 9: International

9 100 International activities

Exchange/friendship/cultural programs. Programs and services designed to encourage mutual respect and friendship internationally.

Development assistance associations. Programs and projects that promote social and economic development abroad.

International disaster and relief organizations. Organizations that collect, channel and provide aid to other countries during times of disaster or emergency.

International human rights and peace organizations. Organizations which promote and monitor human rights and peace internationally.

Group 10: Religion

10 100 Religious congregations and associations

Congregations. Churches, synagogues, temples, mosques, shrines, monasteries, seminaries and similar organizations promoting religious beliefs and administering religious services and rituals.
Associations of congregations. Associations and auxiliaries of religious congregations and organizations supporting and promoting religious beliefs, services and rituals.

Group 11: Business and professional associations, unions

11 100 Business associations

Business associations. Organizations that work to promote, regulate and safeguard the interests of special branches of business, e.g., manufacturers' association, farmers' association and bankers' association.

11 200 Professional associations

Professional associations. Organizations promoting, regulating and protecting professional interests, e.g., bar associations and medical associations.

11 300 Labor unions

Labor unions. Organizations that promote, protect and regulate the rights and interests of employees.

Group 12: Other

(Not elsewhere classified)

12 100 Not elsewhere classified

APPENDIX E: SOCIAL ENTERPRISE DATA TABLES: FREQUENCIES, MEANS AND PROPORTIONS

Table E.1: Frequencies and Percentages of Social Enterprise Data by Geographical Location

	Northern America		Europe		Asia		Latin American and the Caribbean		Middle East		Africa		Oceania	
Variable	*n*	%	*n*	%	*n*	%	*N*	%	*n*	%	*n*	%	*n*	%
Entrepreneurial Motivation														
Necessity	0	0	12	13	3	50	4	29	3	50	12	63	2	33
Opportunity	2	67	66	73	3	50	7	50	3	50	7	37	4	67
Both	1	33	13	14	0	0	3	21	0	0	0	0	0	0
Product Innovation														
No	25	68	577	65	5	31	41	57	3	33	17	68	58	73
Yes	12	32	314	35	11	69	31	43	6	67	8	32	22	28
Process Innovation														
No	17	46	461	52	6	40	30	42	3	38	9	45	59	75
Yes	20	54	423	48	9	60	41	58	5	63	11	55	20	25
Marketing Innovation														
No	13	36	347	39	3	21	20	28	3	43	9	39	61	77
Yes	23	64	539	61	11	79	52	72	4	57	14	61	18	23
All three innovation types														
None	11	31	250	28	3	19	13	18	1	11	7	28	51	64
One	6	17	219	24	2	13	15	21	3	33	8	32	10	13
Two	8	22	218	24	4	25	20	28	3	33	5	20	7	9
Three	11	31	207	23	7	44	23	32	2	22	5	20	12	15

Table E.2: Frequencies and Percentages of Social Enterprise Data by Economy Type

	Factor-Driven		Stage 1 Trans		Efficiency-Driven		Stage 2 Trans		Innovation-Driven	
Variable	*n*	%	*n*	%	*n*	%	*N*	%	*n*	%
Entrepreneurial Motivation										
Necessity	13	68	5	36	8	42	2	50	6	7
Opportunity	6	32	8	57	7	37	2	50	65	78
Both	0	0	1	7	4	21	0	0	12	14
Product Innovation										
No	16	70	19	39	46	65	24	71	563	64
Yes	7	30	30	61	25	35	10	29	310	36
Process Innovation										
No	8	47	15	31	37	52	17	49	449	52
Yes	9	53	33	69	34	48	18	51	415	48
Marketing Innovation										
No	8	38	12	27	24	33	19	58	332	38
Yes	13	62	33	73	48	67	14	42	535	62
All three innovation types										
None	6	26	8	16	18	25	12	33	241	28
One	9	39	6	12	18	25	11	31	209	24
Two	4	17	15	31	16	23	8	22	215	25
Three	4	17	20	41	19	27	5	14	207	24

Table E.3: Frequencies and Percentages of Social Enterprise Data by Civil Society

	Liberal		Welfare Partnership		Social Democratic		Deferred Democratization		Traditional		Welfare Partnership / Social Democratic		Welfare Partnership / Deferred Democratization	
Variable	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Entrepreneurial Motivation														
Necessity	2	4	1	11	0	0	9	43	12	63	0	0	1	25
Opportunity	36	78	7	78	1	100	8	38	7	37	10	77	3	75
Both	8	17	1	11	0	0	4	19	0	0	3	23	0	0
Product Innovation														
No	308	66	61	66	39	53	45	66	17	68	97	77	24	71
Yes	157	34	31	34	35	47	23	34	8	32	29	23	10	29
Process Innovation														
No	253	55	50	56	41	55	34	50	9	45	61	48	18	53
Yes	206	45	39	44	34	45	34	50	11	55	65	52	16	47
Marketing Innovation														
No	189	41	45	49	43	58	26	38	9	39	32	25	11	32
Yes	271	59	47	51	31	42	43	62	14	61	95	75	23	68
All three innovation types														
None	148	32	30	33	26	36	17	25	7	28	21	16	6	18
One	102	22	24	26	12	16	17	25	8	32	43	34	14	41
Two	104	23	18	20	17	23	19	28	5	20	46	36	7	21
Three	108	23	19	21	18	25	15	22	5	20	18	14	7	21

Table E.4: Proportions of Areas of Impact and Impact Diversity by Geographical Location for Social Enterprise

Area of Impact	Northern American		Europe		Asia		Latin America and the Caribbean		Middle East		Africa		Oceania	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Culture	0.11	-	0.24	0.17	0.00	-	0.23	0.34	0.00	0.00	0.04	-	0.21	-
Education	0.25	-	0.10	0.08	0.00	-	0.05	0.11	0.14	0.20	0.17	-	0.09	-
Health	0.17	-	0.03	0.04	0.06	-	0.10	0.17	0.07	0.10	0.08	-	0.00	-
Social Services	0.22	-	0.18	0.15	0.22	-	0.12	0.19	0.50	0.71	0.58	-	0.12	-
Environment	0.06	-	0.06	0.08	0.00	-	0.06	0.12	0.00	0.00	0.00	-	0.03	-
Development	0.22	-	0.06	0.07	0.06	-	0.01	0.02	0.00	0.00	0.29	-	0.09	-
Law	0.06	-	0.06	0.10	0.06	-	0.04	0.07	0.00	0.00	0.00	-	0.00	-
Philanthropy	0.08	-	0.03	0.04	0.00	-	0.00	0.01	0.00	0.00	0.04	-	0.12	-
International	0.03	-	0.01	0.02	0.00	-	0.00	0.00	0.00	0.00	0.00	-	0.00	-
Religion	0.03	-	0.01	0.01	0.00	-	0.00	0.01	0.00	0.00	0.00	-	0.07	-
Business	0.00	-	0.01	0.02	0.00	-	0.00	0.00	0.00	0.00	0.00	-	0.00	-
Other	0.00	-	0.16	0.25	0.44	-	0.27	0.36	0.07	0.10	0.04	-	0.40	-
Total diversity	10.00	-	6.39	4.09	5.00	-	3.13	2.70	2.00	1.41	7.00	-	8.00	-

Table E.5: Proportions of Areas of Impact and Impact Diversity by Economy Type for Social Enterprises

	Factor-Driven		Stage 1 Trans		Efficiency-Driven		Stage 2 Trans		Innovation-Driven	
Area of impact	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Culture	0.04	-	0.01	0.02	0.22	0.30	0.50	-	0.25	0.15
Education	0.17	-	0.07	0.12	0.05	0.10	0.00	-	0.13	0.07
Health	0.08	-	0.15	0.20	0.04	0.06	0.00	-	0.05	0.05
Social Services	0.58	-	0.08	0.11	0.24	0.34	0.00	-	0.20	0.12
Environment	0.00	-	0.00	0.00	0.08	0.13	0.00	-	0.05	0.06
Development	0.29	-	0.01	0.02	0.02	0.04	0.17	-	0.07	0.07
Law	0.00	-	0.01	0.02	0.04	0.07	0.00	-	0.07	0.11
Philanthropy	0.04	-	0.00	0.00	0.02	0.04	0.00	-	0.03	0.04
International	0.00	-	0.00	0.00	0.00	0.00	0.00	-	0.02	0.02
Religion	0.00	-	0.00	0.00	0.00	0.01	0.00	-	0.01	0.02
Business	0.00	-	0.00	0.00	0.00	0.00	0.00	-	0.01	0.02
Other	0.04	-	0.51	0.31	0.18	0.31	0.00	-	0.09	0.13
Total diversity	7.00	-	3.20	1.79	3.20	2.86	2.00	-	7.79	3.83

Table E.6: Frequencies and Percentages of Areas of impact by Civil Society for Social Enterprises

Area of impact	Liberal		Welfare Partnership		Social Democratic		Deferred Democratization		Traditional		Welfare Partnership / Deferred Democratization	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Culture	0.17	0.20	0.25	0.18	0.23	0.02	0.31	0.39	0.04	.	0.44	.
Education	0.15	0.13	0.15	0.06	0.10	0.05	0.07	0.13	0.17	.	0.09	.
Health	0.08	0.08	0.03	0.04	0.07	0.01	0.02	0.04	0.08	.	0.02	.
Social Services	0.20	0.20	0.12	0.08	0.29	0.06	0.11	0.20	0.58	.	0.17	.
Environment	0.04	0.04	0.04	0.07	0.02	0.02	0.00	0.00	0.00	.	0.04	.
Development	0.12	0.11	0.08	0.06	0.05	0.07	0.04	0.07	0.29	.	0.06	.
Law	0.03	0.03	0.03	0.04	0.02	0.02	0.03	0.06	0.00	.	0.15	.
Philanthropy	0.05	0.04	0.03	0.04	0.01	0.01	0.01	0.01	0.04	.	0.01	.
International	0.01	0.01	0.03	0.04	0.02	0.02	0.00	0.00	0.00	.	0.00	.
Religion	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.00	.	0.03	.
Business	0.00	0.00	0.02	0.04	0.00	0.00	0.00	0.00	0.00	.	0.02	.
Other	0.01	0.02	0.16	0.14	0.02	0.02	0.14	0.22	0.04	.	0.03	.
Total diversity	7.33	6.43	7.00	2.83	7.50	4.95	2.83	3.06	7.00	-	11.00	-

Table E.7: Means and Standard Deviations for Sales Revenue and Percent Volunteers by Geographical Location for Social Enterprises

	Sales		Volunteers	
Geographical location	*M*	*SD*	*M*	*SD*
North America	62.88	36.77	62.27	41.62
Europe	62.18	35.79	63.58	44.04
Asia	48.87	28.78	34.21	39.53
Latin America and the Caribbean	68.93	29.66	76.53	37.09
Middle East	56.67	47.61	34.41	44.16
Africa	40.50	32.99	66.75	41.28
Oceania	43.31	28.74	91.24	21.39

Table E.8: Means and Standard Deviations for Sales Revenue and Percent Volunteers by Economy type for Social Enterprises

	Sales		Volunteers	
Economy type	*M*	*SD*	*M*	*SD*
Factor-Driven	41.52	34.63	50.00	45.83
Stage 1 Transitional	58.49	32.86	50.52	41.74
Efficiency-Driven	64.55	32.11	76.25	38.78
Stage 2 Transitional	58.33	31.83	64.17	44.21
Innovation-Driven	62.42	35.95	62.94	44.04

Table E.9: Means and Standard Deviations for Sales Revenue and Percent Volunteers by Civil Society for Social Enterprises

	Sales		Volunteers	
Civil society	*M*	*SD*	*M*	*SD*
Liberal	66.17	34.92	64.55	43.07
Welfare partnership	67.50	35.03	63.26	44.94
Social democratic	57.62	39.01	60.52	47.12
Deferred democratization	66.10	30.34	77.13	36.44

Traditional	40.50	32.99	66.75	41.28
Welfare Partnership / Social Democratic	60.40	35.50	57.66	45.98
Welfare Partnership / Deferred Democratization	58.28	29.86	68.36	42.81

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